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ABSTRACT

The Law School Admission Council (LSAC) National Longitudinal Study was undertaken primarily in response to rumors and anecdotal reports suggesting bar passage rates were so low among examinees of color that potential applicants were questioning the wisdom of investing the time and resources necessary to obtain a legal education. This study presents national longitudinal bar passage data gathered from the class that started law school in fall 1991. Data provided by students, their law schools, and state boards of bar examiners over a 5-year period are included in the summaries and analyses in the report. Summary statistics, graphical illustrations, and mathematical models were used to analyze and present the data. The eventual bar passage rate for all study participants was 94.8% (21,886 of 23,086). The eventual passage rate for all participants of color was 84.7%. The passage rate was lowest for African Americans (77.6%, or 1,062 of 1,368) and highest for White participants (96.7% or 18,664 of 19,285). Eventual pass rates were substantially higher than initial pass rates, and there were no differences in bar passage rate between men and women. Both law school grade point average and Law School Admission Test (LSAT) scores were the strongest predictors of bar examination passage for all groups studied. Although students of color entered law school with academic credentials, as measured by undergraduate grade point average and LSAT scores that were significantly lower than those of white students, their eventual bar passage rates justified admission practices that look beyond those measures. Five appendixes contain forms used to conduct the survey, some data analysis, and an explanation of the use of log odds. (Contains 9 figures and 39 tables.) (SLD)

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LSAC RESEARCH REPORT SERIES

LSAC National Longitudinal Bar Passage Study

Linda F. Wightman

Historical Introduction
Henry Ramsey, Jr.

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Henry Ramsey, Jr.

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Historical Introduction . . . iii
Executive Summary . . . viii
Introduction . . . 1
Chapter One: Summarizing and Evaluating National Bar Passage Data . . . 5
Methodologies . . . 5
The Samples . . . 5
Jurisdictions . . . 5
Schools . . . 5
Participants . . . 6
Statistical Techniques . . . 7
Working With Law School Grades Across Different Law Schools . . . 7
Grouping Law Schools . . . 8
Logistic Regression Models . . . 9
Coding Methods for Categorical Variables . . . 11
Results . . . 11
Summarizing Data About Jurisdictions . . . 11
Summarizing the Distribution of Study Participants Across Jurisdictions . . . 12
Analysis of Relative Differences in Difficulty of Passing the Bar Among Jurisdictions . . . 21
Summarizing First-time Bar Passage Rates . . . 26
Gender Group Comparisons . . . 26
Ethnic Group Comparisons . . . 27
Law School Cluster Comparisons . . . 28
LSAT Mean-Group Comparisons . . . 30
Summarizing Eventual Pass Rates . . . 31
Chapter Two: Building Statistical Models to Identify Factors Related to Bar Passage . . . 35
Testing Logistic Regression Models to Explain Bar Examination Outcomes . . . 38
Evaluating the Impact of Adding Selected Ordered Variables to the Model . . . 39
Evaluating the Impact of Adding SES to the Model . . . 41
Evaluating the Impact of Adding Some Nonordered Variables to the Model . . . 41
Adding Law School Cluster to the Model . . . 41
Examining Law School Cluster Data Graphically . . . 43
Adding Geographic Region to the Model . . . 47
Explaining First-time Bar Examination Outcomes for Examinees of Color . . . 48
Examining Summary Statistics on the Predictor and Criterion Variables Separately by Ethnic Group . . . 49
Examining Ethnic Group Data in Regression Models . . . 51
Adding Ethnicity to the Geographic Region and Law School Cluster Logistic Regression Models . . . 52
Cluster Comparison Using Data Only From White Examinees . . . 53
Chapter Three: Comparison of Examinees Who Passed With Examinees Who Failed . . . 55
Background Characteristics Data . . . 57
Work Experience Data . . . 60
Personal Factors and Pre-enrollment Academic Preparation Programs . . . 62
Financial Data . . . 65

Academic Expectations . . . 69
Career Aspirations . . . 71
Chapter Four: Summary and Discussion . . . 75
Unique Contributions of This Study . . . 75
Summary Findings: Bar Passage Outcomes . . . 75
Building and Interpreting Logistic Regression Models . . . 76
Statistical Issues Related to the Models . . . 77
Evaluating Differences in Pass Rates Among Law School Clusters . . . 77
Evaluating Differences in Pass Rates Among Ethnic Groups . . . 78
Exploring Differences Among Examinees in Three Outcome Categories: First-time Pass, Eventual Pass, and Never Passed . . . 79
Social Policy Issues Related to the Findings . . . 79
Conclusions . . . 80
Appendix A: Letter of Invitation to Jurisdictions . . . 81
Appendix B: Informed Concent Form . . . 85
Appendix C: Analysis of Missing Data . . . 89
Appendix D: Analysis of Data by Regional Group . . . 93
Appendix E: An Explication of the Use of Log Odds . . . 95
List of Tables . . . 97
List of Figures . . . 100

Historical Introduction

Henry Ramsey, Jr.*

The following statement from the Law School Admission Council (LSAC) Bar Passage Study accurately and succinctly describes the primary factors that prompted funding of a national study of the bar examination performance of minority law graduates:

> The LSAC National Longitudinal Bar Passage Study was undertaken primarily in response to rumors and anecdotal reports suggesting that bar passage rates were so low among examinees of color that potential applicants were questioning the wisdom of investing the time and resources necessary to obtain a legal education. There were no reliable sources of empirical data to support or refute those claims. When the LSAC committed to conducting this study, it was done with the conviction that the information was vital to legal education regardless of the outcome. If the dismal failure rates being reported in whispers were accurate, legal education would need to rethink both its admission and educational policy and practice. If they were false, they needed to be replaced with accurate information.[1]

But that statement is too concise to convey the full flavor, texture, and intensity of the public concern and debate about special admission programs for minority students at historically white law schools, especially those located in the old confederate south. The law school and affirmative action developments and circumstances as they existed late in the 1980s heavily influenced the decision to ask for a national study of, basically, two issues: minority performance both in law school and on the bar examination.

Few, if any, affirmative action admission programs existed at historically white law schools prior to 1967.[2] Before the establishment of those special admission programs, with rare exception, few students of color were enrolled in any of the historically white schools.[3] For example, I was the only black person in a class of almost 300 students when I entered the University of California's Boalt Hall in 1960.[4] Indeed, only four black

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* Judge, Alameda County Superior Court (ret.), and former dean, Howard University School of Law.

1. LSAC National Longitudinal Bar Passage Study, Executive Summary, p. viii.

2. *See* Robert M. O'Neil, *Preferential Admissions: Equalizing Access to Legal Education*, 1970 Toledo L. Rev. 281; and Louis Toepfer, *Harvard's Special Summer Program*, 18 J. Legal Educ. 444, at 445 (1966) ("Those making the original plans realized that a program of this sort would be experimental; no law school had ever tried to undertake anything like it. There were no models, patterns or guides to follow in legal or graduate education....").

3. *See* O'Neil, *Ibid.* at 300; Earl L. Carl, *The Shortage of Negro Lawyers: Pluralistic Legal Education and Legal Services for the Poor*, 20 J. Legal Educ. 21 (1967); and Assoc. of Am. Law Schools, amicus brief in Regents of the Univ. of California v. Bakke at 22, reprinted in Landmark Briefs and Arguments of the Supreme Court of the United States: Constitutional Law, Philip B. Kurland and Gerhard Casper eds., University Publications of America, vol. 99 at 619.

4. When I graduated from Boalt Hall in 1963, I was only the thirteenth black person to graduate from that school in its entire history.

students were in the entire student body. The situation at Boalt was much the same for Asians and Hispanics. Circumstances concerning minority students were the same at nearly all white law schools until after 1970.[5]

While we do not have reliable statistics, legal educators and lawyers from that period universally acknowledge that the number of minority lawyers was abysmally low. In 1969, lawyers of color probably made up less than 1 percent of the profession,[6] and most of those lawyers were graduates of the historically black law schools—Howard, North Carolina Central, Southern, and Texas Southern.[7]

That was the situation confronted by law school applicants of color before affirmative action programs were established. Most, if not all, of these special admission programs were established in the two or three academic years immediately after Dr. Martin Luther King's assassination on April 4, 1968. During the following 20 years, as a result of affirmative action, the number of minority students increased substantially at historically white law schools.[8] During this same period, however, a demand, which began in the early 1960s, for law school seats by male and female white applicants continued to intensify and was met.[9]

As the nation approached the 1990s, special admission programs to increase minority enrollment were firmly in place at most law schools. A substantial percentage of those minority admission programs resulted from student pressure and from tenacious efforts by certain faculty members, deans, and admission officers within individual law schools. Their efforts to establish and maintain affirmative action admission programs were significantly helped by the American Bar Association's adoption of Standard 212[10] in August 1981. That accreditation Standard required all ABA-approved law schools to take concrete steps to increase the number of minority lawyers in the profession. The prestigious Association of American Law Schools (AALS) also mandated in January 1990 that its member schools engage in affirmative action to enroll more minority students.[11]

It was against this backdrop of nearly two decades of positive affirmative action developments at American law schools that, in the late 1980s, voices began to question openly and passionately whether the use of university or law school resources to support minority special admission programs was wise or even justifiable. The declared goal of affirmative action programs—increased enrollment of students of color—was rarely challenged. Sometimes the issue was presented in the form of an admonition that the scarce financial resources of minority students (and their families) should not be dissipated in an unrealistic effort for such students to become lawyers.

But the conventional and more frequent argument was that—while initial affirmative action efforts to increase the number of minority lawyers had been meritorious and even praiseworthy—such programs simply had not been successful. According to those critics, this failure was attributable to the great majority of special admission students either flunking out of law school or, when they did manage somehow to

5. Derrick Bell, *Black Students in White Law Schools: The Ordeal and the Opportunity*, 1970 Toledo L. Rev. 539, at 540; *and see* O'Neil, *supra* note 2, at 296.

6. Henry Ramsey, Jr., *Affirmative Action at American Bar Association Approved Law Schools: 1979–1980*, 30 J. Legal Educ. 377 (1980); Edward W. Brooke, *Introduction to the Symposium*, 1970 Toledo L. Rev. 277, at 278; O'Neil, *supra* note 2, at 296; Regents of the Univ. of California v. Bakke, 438 U.S. 265 (1978), opinion of Justice Blackmun at 403, and opinion of Justice Marshall at 395-396.

7. Howard University School of Law, Washington, DC; North Carolina Central University School of Law, Durham, NC; Southern University School of Law, Baton Rouge, LA; and Texas Southern University, Thurgood Marshall School of Law, Houston, TX, as well as the now-closed law schools at Florida A&M University and Miles College.

8. Total minority enrollment at ABA-approved law schools increased from 9,952 in 1978-79 to 14,295 in 1988-89, and to 25,554 in 1995-96. Am. Bar Assoc., "A Review of Legal Education in the United States, Fall 1995," 67-70 (1996). *See* U.S. Commission on Civil Rights, "Toward Equal Educational Opportunity: Affirmative Admissions Programs at Law and Medical Schools," 20 (June 1978) ("In the past decade, affirmative admissions efforts appear primarily responsible for the increasing minority enrollment in law and medical schools."). *See also* Bell, *supra* note 5, at 539.

9. Total J.D. enrollment at ABA-approved law schools increased from 113,080 in 1978-79 to 120,694 in 1988-89, and to 129,318 in 1995-96. Am. Bar Assoc., *supra* note 8.

10. Now Standard 211, ABA Standards for Approval of Law Schools (1997).

11. *See* AALS By-Law 6-4c.

graduate, being unable to pass the bar examination.[12] Sometimes such claims were made by a law school professor or dean, but typically the speaker was a political candidate for an elective office or a state legislator.[13] Those speakers and others then argued that special admission programs should be eliminated because the poor performance of minority students in law school and on the bar examination demonstrated, they alleged, the very low probability of such students ever gaining entry to the legal profession.

While conceding the legitimacy of affirmative action goals, the critics still contended that law schools and universities were wasting precious and limited resources in what was a demonstrably unsuccessful effort to significantly increase the number of minority lawyers and, thereby, enhance the racial and ethnic diversity of the legal profession. Indeed, it was argued that the primary effect of such programs was to unfairly deny law school admission to many better-qualified white college graduates.[14] The evidence cited in support of such statements was almost always anecdotal.[15] Occasionally, the results of an unscientific survey at a particular law school were cited.

Nonetheless, this anti-affirmative action campaign was seen as a real threat to the substantial progress that had significantly increased the number of minority people in law school and in the legal profession. Supporters of special admission programs found it impossible to refute such claims because they too did not have adequate national, empirical data to support their position. There was real concern among affirmative action advocates that the "naysayers" had a clear advantage if this "political debate" was to be decided on the basis of speculation and personal anecdotes.

For those who had fought and worked so hard to get affirmative action or special admission programs in place and accepted, these denigrating charges by affirmative action critics presented an extremely dangerous and difficult situation. Supporters of affirmative action, which included many legal educators and administrators, were convinced that if efforts to eliminate minority admission programs were successful, we would quickly return to the bleak and melancholy times when minority students in the nation's historically white law schools were so few that they were almost a campus peculiarity.[16] This risk was particularly distressing when one considered that the impact would probably be hardest felt at public institutions where lower tuition costs afforded minority students the best opportunity to attend law school. It was also at the public institutions where political critics of special admission programs were in the strongest position to intimidate or, at least, strongly influence university officials.

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12. *See*, e.g., Mary Ann Giordano, "Bar Exam Failures Plague Legal Aid," *Manhattan Lawyer*, Feb. 9, 1988, p.1, ("CUNY's bar results validate an assumption often repeated by the few who have studied the issue of minority bar passage: that roughly 30 percent pass on first taking."); and Daniel O. Bernstein, *The Bar Examiner*, Aug.1989 at 10 ("Unsubstantiated horror stories abound about the poor success rates of these graduates."). *See also, Symposium: The Minority Candidate and the Bar Examination*, 5 Black L.J. 123-127 (1979).

13. *See*, e.g., Anne C. Roark, "UCLA Stiffens Requirements for Law School," *Los Angeles Times*, May 3, 1987, sec.2, p.1 ("...it would be 'irresponsible' for the Law School to continue graduating a significant number of people who do not have a meaningful chance of entering the profession in the state in which they want to live and practice.").

14. *See* DeFunis v. Odegaard, 416 U.S. 312 (1974); *cf.* Regents of the Univ. of California v. Bakke, 438 U.S. 265 (1978).

15. While, as of 1989, reliable studies regarding bar passage in California and New Mexico had been conducted by Dr. Stephen P. Klein and Dr. Roger Bolus, reliable scientific research had not been done in other states and there were no studies of national data. *See*, e.g., Klein, "Factors associated with the difference in passing rate between Anglo and Hispanic applicants on the New Mexico bar examination," (1981) (a report prepared for the New Mexico Board of Bar Examiners); and Klein and Bolus, "Minority group performance on the California bar examination," (1987) (a report prepared for the California Committee of Bar Examiners).

16. *See* Carl, *supra* note 3, at 23 ("It is interesting to note that in the 1964-65 academic year there were 701 Negro students in the A.B.A. approved law schools. 434 were in the 120 predominantly white law schools, or an average of 3.06 Negro students per school; 267 were in the six predominantly Negro law schools, or an average of 44.5 Negro students per school.") *See also*, Assoc. of Am. Law Schools, *supra* note 3, at 600 ("The imposition of a requirement that professional schools forgo any consideration of race in making admissions decisions would result in substantially all-white law schools."); and Deans of the University of California Law Schools, amicus brief in Regents of the Univ. of California v. Bakke, in Kurland and Casper, *supra* note 3, at 69 ("The anticipated consequences of declaring special admissions programs unconstitutional...are a decline toward the vanishing point of the number of minority students...").

This is the historical context that motivated the development of studies to inform the debate about the number of minority lawyers of color that the law schools were producing. The first such study, issued in 1986,[17] was a cooperative effort between the ABA and the LSAC. This initial effort produced evidence that law school academic attrition was substantially less than had been reported by affirmative action critics.[18]

But the need for accurate bar passage data presented a more formidable research challenge. The majority of the Boards of Bar Examiners and the state Supreme Courts would not release confidential bar passage information to outsiders, even academicians, regardless of the claimed need for such information. Also, the collection and statistical analysis of this information from 51 separate jurisdictions,[19] even if such data had been available, would require substantial financial resources and exceptional scientific knowledge, skill, and experience in order to obtain scientifically valid information about minority bar performance nationwide.

Thus, there still remained the central unanswered question of whether the majority of minority law graduates, as claimed by many affirmative action critics, had failed to gain admission to the bar. Also, there were still people who continued to claim that the attrition rate for minority law students was at an exceptionally high level. There were no data to counter these two forceful and potentially devastating unsubstantiated assertions. The need felt by affirmative action supporters for accurate and scientific bar passage information to prove their claim that special admittees were graduating from law school and passing the bar examination in significant numbers was becoming increasingly critical.

In 1988, the newly formed Minority Affairs Committee of the LSAC, then chaired by Dean James Douglas[20] of Texas Southern University Thurgood Marshall School of Law, gave this topic priority on its agenda and recommended funding of a national bar passage study. In 1989, the LSAC Board of Trustees agreed to fund the study recommended by the Minority Affairs Committee.

The rest is history. The longitudinal study was undertaken by LSAC, with Dr. Linda Wightman, then LSAC Vice President for Test Development and Research, as the principal investigator. The class scheduled to enter ABA-approved law schools in fall 1991 was selected as the study group. Oversight for the study was assigned to LSAC's Test Development and Research Committee and its Minority Affairs Committee. Costs were covered by LSAC's Research and Minority Funds. An eight-member Bar Passage Study Work Group was formed to give advice to Dr. Wightman in developing the study. Professor David Hill of the University of Colorado School of Law, then chairperson of the Minority Affairs Committee, appointed me chairperson of the work group, which included state Supreme Court Justices, law school professors, and former bar examiners.[21] The objective of those who led the effort to gain LSAC approval and support for the Bar Passage Study was clear, simple, and unequivocal: to find accurate and scientifically valid answers to the questions of how minority students performed in law school and on the bar examination. We wanted those two questions answered honestly and unequivocally. If the answer were negative, then we would know that additional and perhaps different work would have to be done in order to achieve our goal of a diverse legal profession serving a multi-ethnic society. If positive, then critics of affirmative action, who had asserted that special admission programs should be dismantled because students admitted under those programs did not gain entry to the legal profession in significant numbers, would have been refuted with valid scientific evidence.

17. Law School Admission Council, "Law School Admission and Graduation: Minority Student Experiences and Success Rates," (Jan. 1986).

18. *Id.*

19. Fifty states and the District of Columbia.

20. Now Texas Southern University President. Other members of the Committee present at this meeting were Bob Clayton, John Farago, Alan Matheson, Denise Purdie, Leo Romero (current Chair, LSAC Board of Trustees), and Dennis Shields. Peter Winograd was present *ex officio* as president of LSAC.

21. The members of the original Bar Passage Study Work Group were: Professor George L. Dawson, University of Florida College of Law; Professor David S. Hill, University of Colorado School of Law; Professor Alex M. Johnson, University of Virginia School of Law; Armando M. Menocal, III, Esq., attorney-at-law and former Chairperson of the California Committee of Bar Examiners; Hon. Joseph R. Quinn, Chief Justice of the Colorado Supreme Court; Hon. Richard D. Simons, Associate Justice, New York Court of Appeals; Professor Katherine L. Vaughns, University of Maryland School of Law and former member of the California Committee of Bar Examiners; and me.

Those of us who pressed for the Bar Passage Study in 1988[22] are extremely pleased that the study shows the claim is patently false that students of color do not graduate from law school or become members of the legal profession. As readers of Dr. Wightman's report will discover, the truth is that minority law students graduate and pass the bar examination soon after graduation in significant numbers. Specially admitted minority law graduates are now serving our communities as responsible lawyers, professors, judges, law librarians, corporate executives, government officials, and university presidents, as well as in other positions of community leadership and service. Therefore, the debate should be put to rest about whether law school affirmative action admission programs materially increase the number of minority lawyers.

But the end of the old millennium coupled with the beginning of a new century and a new millennium presents us with more difficult questions regarding minority students and professional educational opportunities. Examples are questions concerning the role of socioeconomic factors in determining performance in college and on the LSAT and the importance of preschool and elementary education for performance in college and law school. Another example is a more specific examination of what role factors such as academic support programs, expectations of success, and access to information about and preparation for the bar examination play in determining success in law school and on the bar examination. The Bar Passage Study was not designed to answer these new questions. Fortunately, the data collected to answer two questions posed at the end of the 1980s may be sufficiently rich to provide a source for answers to some of these new questions that we face at the end of the 1990s.

22. Among the persons who had worked for years to bring about a sound study of minority bar passage rates were: Howard Glickstein, Harry Groves, David Hill, Beth Cobb O'Neil, and James P. White.

Executive Summary

The Law School Admission Council (LSAC) National Longitudinal Bar Passage Study was undertaken primarily in response to rumors and anecdotal reports suggesting that bar passage rates were so low among examinees of color that potential applicants were questioning the wisdom of investing the time and resources necessary to obtain a legal education. There were no reliable sources of national empirical data to support or refute those claims. When the LSAC committed to conducting this study, it was done with the conviction that the information was vital to legal education regardless of the outcome. If the dismal failure rates being reported in whispers were accurate, legal education would need to rethink both its admission and educational policy and practice. If they were false, they needed to be replaced with accurate information.

This study presents national longitudinal bar passage data gathered from the class that started law school in fall 1991. Data provided by students, their law schools, and state boards of bar examiners over a five-year period are included in the summaries and analyses presented herein. The goals of the data analysis were two: to report for the first time national bar examination outcome data by ethnicity and gender and to explore factors that could explain differences in outcomes. Summary statistics, graphical illustrations, and mathematical models were used to analyze and present the data. The major findings of the study are as follows:

- The eventual bar passage rate for all study participants was 94.8 percent (21,886 of 23,086).
- The eventual passage rate for all study participants of color was 84.7 percent (2950 of 3482).
- The eventual passage rates for racial and ethnic groups were: American Indian, 82.2 percent (88 of 107); Asian American, 91.9 percent (883 of 961); black, 77.6 percent (1062 of 1368); Mexican American, 88.4 percent (352 of 398); Puerto Rican, 79.7 percent (102 of 128); Hispanic, 89.0 percent (463 of 520), white, 96.7 percent (18,664 of 19,285); and other, 91.5 percent (292 of 319).
- Among those examinees of color who eventually passed, between 94 and 97 percent passed after one or two attempts and 99 percent passed by the third attempt.
- The eventual pass rates increased substantially over first-time rates for all examinees.
- There were no differences in bar passage rates between men and women.
- Both law school grade-point average (LGPA) and Law School Admission Test (LSAT) score were the strongest predictors of bar examination passage for all groups studied.

- Other measurement variables, such as undergraduate grade-point average (UGPA) and selectivity of the undergraduate school, failed to make a practical additional contribution to a bar-passage prediction model that already included LGPA and LSAT scores.

- When the effects of both LGPA and LSAT score were removed, the probability of passing varied significantly by groups of law schools and by geographic region in which the bar examination was taken.

- When a series of background variables typically identified as potential contributors to low academic achievement were examined, they showed no relationship to bar passage or failure. These variables included academic expectations for self, language spoken in the home, need to work for pay during undergraduate school, and financial responsibility for others during law school.

- Some differences were found with respect to age for all ethnic groups and with respect to socioeconomic status for some but not all groups.

- A demographic profile that could distinguish first-time passing examinees from eventual-passing or never-passing examinees did not emerge from these data.

- Although students of color entered law school with academic credentials, as measured by UGPA and LSAT scores, that were significantly lower than those of white students, their eventual bar passage rates justified admission practices that look beyond those measures.

LSAC National Longitudinal Bar Passage Study

Linda F. Wightman*

Introduction

Issues related to achieving diversity in legal education and the legal profession have been the subjects of scholarly research and discussion for the past decade or more.[1] During those years, studies documented the loss to higher education in general, as well as legal education specifically, of students of color throughout the education pipeline. Those studies noted that steps to remedy the shortage of a diverse pool of academic talent must begin early and continue throughout the educational and professional training processes.[2] This study focuses exclusively on legal education as well as on only one of the points at which potential lawyers of color are at risk of being lost to the profession—the point of transition from law school graduation to admission to the bar. There is a literature that identifies this transition point as a source of substantial loss, but those studies also acknowledge that national data to provide broad support to their claims are unavailable.[3]

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*Associate Professor, Department of Educational Research Methodology, University of North Carolina at Greensboro. The opinions expressed in this report are those of the author and do not necessarily reflect those of the University of North Carolina at Greensboro or of the Law School Admission Council, Inc. A study of this magnitude could never have come to fruition without the support, patience, and hard work of a large number of people. I am grateful to the Law School Admission Council for providing the many resources necessary to sustain this effort; to the members of the various Test Development and Research Committees and Minority Affairs Committees, especially George Dawson and John Henry Schlegel, who provided support, assistance, counsel, guidance, and critical review during the development of the study design, the questionnaires, and the early data analyses; to members of the LSAC Bar Passage Study Work Group, who helped form the questions to be addressed and solicited cooperation from courts, legislatures, and state boards of bar examiners; and to the law schools and state boards of bar examiners that provided data and access to students, without which this study could not have come to be. I am also grateful to LSAC staff Jean Madden, Kathy McGeady, Mary Phayre, and Lillian Worthington who provided immeasurable administrative and moral support during the data collection phase of this project. Most importantly, I am indebted to Judge Henry Ramsey, Jr., whose vision for this research was the impetus for initiating funding for this study, whose commitment to the publication of the findings whatever they might be was a major reason for my involvement in the endeavor, and whose tireless work and dogged determination to enlist the participation and support of every law school and state board of bar examiners are the foundations on which the success of this effort was built.

1. *See, for example,* Maurice Emsellem, *Racial and Ethnic Barriers to the Legal Profession: The Case Against the Bar Examination,* 61 New York State Bar Journal 42 (April, 1989) (citing the effort of the New York State Judicial Commission on Minorities to evaluate the process for admission to the Bar in order to increase minority representation in the profession); *see also* Dannye Holley and Thomas Kleven, *Minorities and the Legal Profession: Current Platitudes, Current Barriers,* 12 Thurgood Marshall L. Rev. 299 (1987) (providing an extensive review of earlier scholarship related to accessibility of the legal profession for ethnic minorities). *See also* Am. Bar Assoc. Task Force on Minorities and the Legal Profession, A Report (1986); the 1993-1997 programs of the Law School Admission Council Annual Meeting and Educational Workshop; and the 1993-1996 programs of the Assoc. of Am. Law Schools Annual Meeting, all featuring major sessions devoted to this topic.

2. *See, for example,* Shirley Vining Brown, Minorities in the Graduate Education Pipeline. Princeton, NJ: Educational Testing Service (1987); Michael T. Nettles, Black, Hispanic, and White Doctoral Students: Before, During, and After Enrolling in Graduate School. Princeton, NJ: Educational Testing Service (1990); and Holley and Kleven, *supra* note 1.

3. *See, for example,* Daniel O. Bernstine, "Minority Law Students and the Bar Examination: Are Law Schools Doing Enough?" *The Bar Examiner,* August, 1989 (discussing difficulties in compiling accurate data because law schools are unwilling to share data related to minority bar passage with each other and because jurisdictions are careful to protect the confidentiality of the bar passage rates at individual law schools); G. Segal, Blacks and the Law: Philadelphia and the Nation, Philadelphia: University of Pennsylvania Press, (1983) (ascribing the reason for the lack of national studies of blacks in the legal profession to unavailability of information from bar associations and boards of bar examiners); and Katherine L. Vaughns, *Toward Parity in Bar Passage Rates and Law School Performance: Exploring the Sources of Disparities between Racial and Ethnic Groups,* 16 Thurgood Marshall L. Rev. 425 (noting that solutions to the problem of disparities in bar passage rates among ethnic and racial groups are hampered by the limited nature of the available data).

This study provides national longitudinal data to examine many of the questions that were raised in earlier research about bar passage and entry to the profession by members of selected ethnic groups. It is the culmination of a massive six-year data collection effort sponsored by the Law School Admission Council (LSAC). The study tracked students who entered law school in fall 1991 through three or more years of law school and up to five administrations of the bar examination.[4]

The contributions of this study are unique in several respects. Most importantly, it is the first time that national race- and gender-specific bar passage data have been available for analysis and study. It is also unique in that the data are longitudinal. From the perspective of bar examination outcomes, longitudinal data allow a comparison of first-time outcomes with eventual outcomes. The data also provide information about the number of attempts and the locations of the bar examinations attempted both initially and over time by individual applicants for admission to the bar. From an educational perspective, the longitudinal nature of the data provides opportunities to examine not only outcomes, but also a myriad of background variables, educational and social opportunities, and law school experiences that might help explain differences in outcomes among individual applicants.

Some of the previous literature on bar passage rates among applicants of color focused on the role of the bar examination itself, sometimes debating the value of the exam, other times inquiring about the validity or possible bias in the exam.[5] These kinds of questions are not addressed in this report. In fact, information about the content of bar examinations that would be required to study some of these questions is not part of the bar passage study database, thus precluding the option to address them. The primary goals of this study are two fold: to summarize and examine national bar examination outcomes among members of different ethnic groups and by gender, and to provide some explanation of those outcomes through examination of a variety of demographic, social, and academic performance variables.

The presentation of bar examination outcome data is divided into two parts: first-time bar passage and eventual bar passage. Some research in this area focuses on first-time bar passage rates, while other work describes eventual pass rates as the data of most import.[6] Both bar passage rate calculations, first-time and eventual, are treated separately in this report. First-time bar passage rates were considerably lower than eventual pass rates for some groups. The lower first-time pass rates are the source of much of the negative publicity about low bar passage rates for selected groups of law school graduates.[7] Eventual passing rates

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4. The LSAC Bar Passage Study is a national longitudinal study of legal education and entry into the profession that was jointly initiated by the Law School Admission Council Minority Affairs and Test Development and Research Committees in 1989. The study followed a sample from the class that entered law school in the fall of 1991 through graduation and entry to the bar. Entering credentials; extensive background data gathered at the time they entered law school (including information about their goals, aspirations, self-concepts, and perceptions, as well as their extracurricular activities, personal responsibilities, and employment aspirations); law school performance data; and bar examination data are available for the sample, which includes approximately 70 percent of the fall 1991 entering class. Students from the sample remained in the active bar passage study files for approximately two years after graduation (five bar examination administrations) or until they passed a bar examination, whichever came first. In addition to the data collected for this large sample, annual questionnaires were administered to a smaller sample of approximately 7,000 students. Analyses of data collected from the students in the smaller longitudinal sample are not included in this report.

5. *See, for example,* Maurice Emsellem and Richard S. Barrett, *The Bar Examination Debate (Continued),* 16 Thurgood Marshall L. Rev. 531 (1991) (arguing that the bar examiners have not met the fundamental obligations of content validity because they have not identified or defined those lawyering skills that the bar examination purports to test); and Stephen P. Klein, "Bar Examinations: Ignoring the Thermometer Does Not Change the Temperature," *New York State Bar Journal,* v. 16 no. 6 (October, 1989) at 28 (providing evidence of the validity of the bar examination through the results of reviews by six independent panels of lawyers who concluded that the nationally administered multiple-choice questions (a) were highly material to the practice of law, (b) posed realistic case situations, and (c) required examinees "to apply their knowledge of the law to new situations and reason to a conclusion"). *See also,* Pettit v. Gingerich, 427 F.Supp. 282, at 290 (D.Md. 1977) (where plaintiffs used evidence of disproportionately high failure rates among black examinees to allege that the examination is "inherently discriminatory or culturally biased against blacks").

6. *See, for example,* Edna Wells Handy, "Blacks, the Bell Curve, and the Bar Exam," *NBA Magazine,* March/April, 1996 at 26 (arguing that the importance attached to passing the bar on the first try has been unnecessarily inflated); Klein *supra* note 5 (describing eventual pass rate rather than initial pass rate as the best indicator of access to the profession); and Elizabeth Tennyson, "Who's Passing the Bar," *The National Jurist,* March/April, 1997, at 31 (rating law schools based on first-time bar passage rates).

7. *See, for example,* Stephen P. Klein, *Disparities in Bar Passage Rates Among Racial/Ethnic Groups; Their Size, Source, and Implications,* 16 Thurgood Marshall L. Rev. 517 (1991); and Bernstein, *supra* note 3.

produce the final evidence of whether some groups of law students are disproportionately lost to the profession and these rates are considerably higher than first-time rates for all students.

A question that was of great interest when this study was undertaken was whether the bar examination is a barrier to entry to the legal profession, particularly for members of some ethnic groups. Because the concern is about entry to the profession, pass or fail outcomes are aggregated across jurisdictions when national bar passage summary statistics are reported. The decision to aggregate data is directed to the broad goal of understanding who had the opportunity to enter the legal profession after completing law school. It was not necessary to distinguish among jurisdictions with respect to passing standards in order to answer that question. When the goal was to identify factors that are related to variability in bar examination outcome, analyses were conducted separately by jurisdiction as well as with aggregated data. The individual jurisdictions' results were compared with analyses conducted on total group data. Decisions about how to report the results depended on whether the results were the same or different for different jurisdictions.

This study provides national summary data separately for first-time bar passage data and eventual bar passage data to describe various patterns of bar examination outcomes. In addition to summary statistics, statistical models were developed, using first-time data, to seek an understanding of the relationship between a variety of factors and pass or fail outcomes. Pass/fail data were analyzed in two ways. First, bar examination outcome was considered using data grouped across jurisdictions, testing an implicit assumption that a pass or fail outcome is fungible across jurisdictions. Second, pass/fail data were analyzed separately within each jurisdiction.

National first-time outcomes are addressed separately from eventual outcomes in Chapter One of this report. Statistical models to identify factors that are related to bar exam outcomes are presented in Chapter Two. Chapter Three compares those who passed the first time, those who eventually passed, and those who never passed using empirical study data. Comparisons reported in Chapter Three were made on a variety of characteristics often hypothesized to be related to law school and bar examination performance. None of the variables examined in the analyses reported in Chapter Three provided uniformly significant distinctions among those three bar examination outcomes. One useful outcome from those analyses is that they dispel some myths about demographic background factors that are commonly believed to be related to success on the bar examination.

Chapter One: Summarizing and Evaluating National Bar Passage Data

Methodologies

The Samples

Jurisdictions. All United States mainland jurisdictions were invited and encouraged to participate in this study. A copy of the letter of invitation is included in Appendix A. This report presents bar passage results from 50 jurisdictions.[8] Among those 50, thirty-six actively supported this study and provided bar results data for use in its analyses. Fourteen states declined to participate for a variety of reasons. The most typically reported reasons were lack of interest in the questions posed by the study, distrust of the use that would be made of the data, and a belief that the jurisdiction was unable to share bar examination data about individuals even when those individuals explicitly granted permission. Bar examination data for the 14 jurisdictions that were unwilling to provide data to LSAC were obtained from one or both of two sources, participating law schools and public lists of passing candidates published by a state. Using published lists of passing candidates introduced a small bias into the data because some unknown number of unmatched study participants were, in fact, failing candidates. Fortunately, the number of participants who were matched only through public lists was small.[9]

Schools. Among the 172 U.S. mainland ABA-approved law schools invited to participate in this study, 163 agreed to do so. Data from those 163 schools (95 percent of eligible schools) are presented in this report. Within various analyses, the number of individual schools that was included varied depending on the availability of specific data elements. For example, schools with low participation rates were excluded from analyses that included cumulative law school grade-point average (LGPA) because the accuracy of standardizing LGPAs for their students would be questionable. Specifically, for analyses that were conducted within school (as opposed to those conducted on aggregate student data independent of degree-granting school), seven schools with student participation rates below 20 percent were excluded from the analyses. Data from students who attended schools with low participation rates were included in summary statistics and in analyses that were not school dependent, however. Likewise, schools that did not give first-year grades or that did not calculate cumulative LGPAs were, by necessity, not included in analyses that rely on these data.

8. One study participant took and passed his first bar exam in the Virgin Islands and six did so in Hawaii. Although bar pass outcomes for these seven participants are included in overall summary data, these two jurisdictions are not included in any analyses by jurisdiction and are in addition to the 50 jurisdictions referenced in the text.

9. See "Participants," *infra* page 6, providing detailed counts of bar examination results obtained from public lists.

Participants. The individual participants in this study were students who entered a participating law school in fall 1991, graduated during the course of the study, and took one or more bar examinations. Among the approximately 40,000 students in the fall, 1991 entering class, 29,234 returned the initial study questionnaire (*The LSAC Bar Passage Study Entering Student Questionnaire*) administered at the beginning of their first year of law school. Among those who returned questionnaires, 27,478 signed an informed consent form agreeing to the release of law school and bar examination performance data for this study. A copy of the participating student *Informed Consent Form* is found in Appendix B, as is a copy of the letter encouraging students to participate.

The total number of students for whom bar examination results were available represents more than 93 percent of the participating fall 1991 entering students known to have graduated. This figure was calculated as follows: among those students who signed informed consent forms, 24,814 (90.3 percent) had graduated from law school at the conclusion of this study, and bar examination results were available for 23,103 (93 percent) of them. A small caution in these data is that the earliest pass information for 967 (approximately four percent) of these students was obtained only from public lists of passing applicants published by jurisdictions unwilling to provide bar passage information for this study. Counting those 967 students among those who passed the first time could slightly inflate the reported first-time pass rates because public lists do not include names of failing examinees. The data suggest that this is not a serious concern. Comparing the date of law school graduation with the date of first recorded bar examination for these 967 study participants found only one participant whose graduation date preceded her bar passage date by 18 months—the largest observed discrepancy. Twenty-four participants graduated one year earlier than their first recorded bar examination date and 39 took the second rather than first available bar examination following their date of graduation. The worst case would be if all 64 of these graduates actually took and failed one bar examination before passing, even though the study records them as passing on the first attempt. Even if this were the case (an unlikely event), these 64 represent an insignificant fraction of study participants—less than three tenths of one percent. A second caution in these data results from those study participants known to have graduated but who were not matched to bar passage data in any jurisdiction. The data do not suggest any systematic differences between the matched and unmatched participants on the variables of interest in this study. An analysis comparing students who were not matched with students who were appears in Appendix C.

A first-time bar result for this sample is defined as the earliest bar examination outcome that is matched to a study participant. For participants who applied to more than one jurisdiction on the bar administration date that marked their first attempt, if at least one outcome is pass, their outcome is counted as a pass. Additionally, the jurisdiction in which the pass occurred is used for subsequent analyses of first-time bar results. This procedure was used because a primary interest of this study is whether the bar examination is a barrier to entry to the profession for identifiable groups of law school graduates. If an applicant passed the bar in at least one jurisdiction, she or he gained entry to the profession.[10] If more than one pass occurred for the same first bar administration date, one of the states in which the exam was passed was randomly selected for the study participant and that state was used for all subsequent within-state analyses. A single state and outcome were selected when multiple passes occurred in order to avoid counting an individual more than one time in the summary data and other analyses. The total number of study participants with multiple first-time bar passage outcomes was 2,080, which is 9.5 percent of the total group of study participants. Among those, three passed in three different jurisdictions; the remainder in two. Slightly more than 91 percent of participants with multiple first-time passes tested in the Northeast region. In no case were the multiple jurisdictions within different geographical regions as defined in this report. Thus the random assignment of multiple passers to a single jurisdiction results in no distortion in the reported data.

10. Issues related to preferred choice of jurisdiction in which to practice and related questions of differences, real or perceived, of employment opportunity and career advancement are of import, but are beyond the scope of the present study.

Statistical Techniques

Working With Law School Grades Across Different Law Schools. In previous studies, final cumulative law school grade-point average was identified as one of the most important predictors of performance on the bar examination.[11] Law school grades needed to be included in the models developed from the data collected for this study. Because these longitudinal data were collected for only one intact class, the numbers of students of color in most schools were too small to support within-school analyses by ethnic group. A method was needed to combine law school grades across schools in order to make use of the national data that were available for analysis.

Problems associated with using grade-point averages earned by students attending different schools as if they all have the same meaning have been the subject of discussion and study among psychometricians and educational researchers for many years.[12] A variety of statistical methods that adjust GPAs for differences in grading standards have emerged.[13] A recent study to compare the effectiveness of various grade-adjustment methods found that most function similarly to one another, providing some flexibility in which method to choose. More importantly, despite high correlations with actual GPA, adjusted GPA operates differently from actual GPA. That is, the adjusted GPA seems to be superior in terms of reliability and validity.[14]

An adaptation of a method used by Ramist, Lewis, and McCamley[15] to adjust course grades for differences in difficulty was developed to adjust law school grades in this study.[16] The goal for Ramist et al. was to adjust for different grading standards among courses in the same school; the goal for this study was to adjust for potentially different grading standards among law schools. This adjustment required several steps. First, final cumulative law school grades were standardized separately within each law school to have a mean of 0 and a standard deviation of 1. This step was necessary because not all law schools used the same grading scale. Standardizing within school essentially puts all schools on a common scale. The problem with comparing grades standardized within school is that differences between schools with respect to grading standards or rigor are ignored. In other words, regardless of differences between schools, a standardized LGPA of 0 at school A could not be distinguished from an LGPA of 0 at school B.

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11. *See, for example,* Alfred B. Carlson and C. E. Werts, Relationships among Law School Predictors, Law School Performance, and Bar Examination Results LSAC Research Report No. 76-1, Princeton, NJ (1976) (identifying LSAT score and law school grades as significant predictors of Multistate Bar Examination performance); Bernstine, *supra* note 3, at 11 (asserting that LSAT scores and law school performance were the two strongest predictors of bar passage in the longitudinal study of success of its students on the bar examination carried out by Howard University School of Law during the years 1980 to 1986 and updated in 1988); and Klein, *supra* note 7, (reporting how well differences in law school grades can explain disparities in bar examination scores and pass rates).

12. *See, for example,* Henry I. Braun and Ted H. Szatrowski, Development of a Universal Grade Scale for American Law Schools and the Reconstruction of Ideal Validity Experiments. LSAC Research Report No. 82-3, Princeton, NJ (1982); W. B. Schrader and Barbara Pitcher, Adjusted Undergraduate Average Grades as Predictors of Law School Performance. LSAC Research Report No. 64-2, Princeton, NJ (1964); and Lawrence J. Stricker, Donald A. Rock, Nancy W. Burton, Eiji Muraki, and Thomas J. Jirele, Adjusting College Grade-Point Average for Variations in Grading Standards. ETS Research Report RR-92-65, Princeton, NJ (November, 1992).

13. *See, for example,* R.D. Goldman and M.H. Widawski, *A Within Subjects Technique for Comparing College Grading Standards: Implications in the Validity of the Evaluation of College Achievement,* 36 Educational and Psychological Measurement 381 (1976); R. Elliot and A.C. Strenta, *Effects of Improving the Reliability of the GPA on Prediction Generally and on Comparative Predictions for Gender and Race Particularly,* 25 Journal of Educational Measurement 333 (1988); John Young, *Adjusting the Cumulative GPA Using Item Response Theory,* 27 Journal of Educational Measurement 175 (1990); Stricker, *supra* note 12; Len Ramist, Charles Lewis, and L. McCamley, *Implications of Using Freshman GPA as the Criterion for the Predictive Validity of the SAT,* in W.W. Willingham, C. Lewis, R. Morgan, and L. Ramist (eds.) Predicting College Grades: An Analysis of Institutional Trends Over Two Decades, Princeton, NJ: Educational Testing Service, (1990) at 253.

14. *See, for example,* Stricker, *supra* note 12.

15. *See* Ramist, *supra* note 13.

16. The method employed by Ramist et al. used the discrepancy between the average grade earned in a college course and the average predicted overall GPA, predicted from SAT scores and high school grades, for students in the course to adjust grades for different courses within the same college or university. They used this "grade-residual mean" to assess the severity or leniency of grading standards among courses.

The second step to adjust law school grades was to regress the standardized LGPA of all students on Law School Admission Test (LSAT) score and undergraduate grade-point average (UGPA), thus obtaining linear least squares regression weights to predict LGPA from LSAT score and UGPA. These weights then were applied to the LSAT score and UGPA of every student to obtain a predicted LGPA. The average of the predicted LGPAs was calculated separately for each law school to obtain a within-school predicted mean. Each school's predicted mean then was used to adjust the within-school standardized LGPA for every student in that school. For example, if the mean predicted LGPA (on the standardized 0,1 scale) for a particular school were 0.1, then 0.1 was added to the standardized LGPA of every student in that school. If the mean predicted LGPA were -0.2, then 0.2 was subtracted from the standardized LGPA of every student in that school.

Grouping Law Schools. In order to evaluate a potential relationship between characteristics of the degree-granting law school and bar passage, law schools were grouped. The purpose of grouping law schools was to consider together those schools that were most like one another on some characteristic or set of characteristics. This option is particularly important when samples within individual schools are small, as was the case with ethnic group data in this study. For several analyses, participating schools were grouped in two ways.[17] First, they were sorted into one of three strata, using entering-class median LSAT score as the only grouping variable.[18] The other method of grouping law schools was based on the application of a statistical method known as cluster analysis.[19] Law schools were assigned to clusters based on simultaneous consideration of seven variables. Four of the variables (size, cost, selectivity, and faculty/student ratio) focus on characteristics of the school, while the other three (percent minority, median

17. Schools with response rates less than 20 percent were not included in analyses done separately by cluster or stratum. Also, one school that differed so much from the other schools on the seven variables included in the cluster analysis that it was relegated to its own cluster by the methodology was not included in analyses by cluster.

18. *See* Linda F. Wightman, Legal Education at the Close of the Twentieth Century: Descriptions and Analyses of Students, Financing, and Professional Expectations and Attitudes. Law School Admission Council Research Report, Newtown, PA (1995), p. 5 (for a rationale and procedure for grouping law schools into three strata based on median LSAT score of the entering class); and S. Warkov and J. Zelan, Lawyers in the Making. Chicago: Aldine Publishing Co. (1965).

19. The term *cluster analysis* is used to describe a variety of statistical methods designed to create empirical groupings of objects. The theoretical properties of the variety of algorithms that fall under this generic term are considered in detail in the broad literature on cluster analysis. *See, for example,* C.S. Anderberg, Cluster Analysis for Applications. New York: Academic Press, Inc. (1973); R. M. Cormack, *A Review of Classification*, 134 Journal of the Royal Statistical Society, Series A 321 (1971); B. S. Everitt, Cluster Analysis. London: Heinemann Educational Books (1980); and M. Lorr, Cluster Analysis for the Social Sciences. San Francisco: Josey Bass (1983).

Errata **Corrected table for footnote 20, page 9**

Due to a formatting error, the data in a table in footnote 20 is improperly formatted. The correct format is:

	Cluster					
Variable	3	5	4	2	1	6
Tuition	3,481	6,141	11,428	11,153	13,659	3,136
Enrollment	606	516	797	1,466	704	347
Selectivity	0.28	0.5	0.34	0.26	0.17	0.33
Percent minority	0.15	0.08	0.12	0.19	0.2	0.58
Faculty/student ratio	21.14	21.64	24.73	28.14	22.04	17.77
LSAT	37.65	32.29	35.51	39.53	42.06	29.25
UGPA	3.29	3.05	3.09	3.34	3.5	2.86
Percent Private	4	56	98	60	88	29
Number of Schools	53	18	19	21	52	8

LSAT score, and median UGPA) focus on characteristics of the student body. The cluster analysis identified six naturally occurring clusters or groups of law schools, numbered 1 to 6.[20]

Logistic Regression Models. Because the outcome of primary interest in this study is entry to the profession, bar passage results in the form of pass or fail were analyzed as the criterion variable in models designed to identify factors that might help explain those outcomes. Logistic regression was the method of analysis.[21] The logistic procedure used in this study fit linear logistic regression models for binary data by the method of maximum likelihood to investigate the relationship between the pass or fail outcome and a selection of explanatory variables.[22]

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20. A detailed technical discussion of the cluster-analysis methods examined and of the results obtained is found in L. F. Wightman, Clustering U.S. Law Schools Using Variables that Describe Size, Cost, Selectivity, and Student Body Characteristics. LSAC Research Report No. 93-04, Newtown, PA (1993). Wightman initially considered several of the sequential agglomerative hierarchical cluster-analysis methods for analysis of the law school data. Each of the hierarchical methods begins by considering each school as a separate cluster. Each level of clustering joins two clusters by selecting from among all the clusters those two that are most similar. The clustering procedure continues until either a stopping rule is encountered or all of the schools have been combined into a single cluster. Some unique properties of the hierarchical clustering procedures of particular interest are (1) the clusters are always nonoverlapping; (2) once two schools become members of the same cluster, they are never again separated; and (3) with the addition of each new school to the cluster, the centroid of the cluster is recalculated. An unfortunate consequence of this latter property is that schools already in the cluster could become more distant from the centroid of the parent cluster than from the centroid of some other clusters. Thus the subsequent clusters could become increasingly heterogeneous. One remedy for this situation is to use a nonhierarchical clustering algorithm as a relocation procedure by which a school is reassigned to another cluster if the distance to the centroid of that cluster is less than the distance to the centroid of the parent cluster. *See* H.S. Field and L.F. Schoenfeldt, *Development and Application of a Measure of Students' College Experiences*, 60 Journal of Applied Psychology 491 (1975).

Law schools were assigned to one of six clusters using each of the following procedures:

(1) Law schools were grouped into 12 clusters using each of the Ward's average linkage, complete linkage, and single linkage clustering methods. These 12 clusters were then relocated and fused to form 6 final clusters using the nonhierarchical centroid method employed by the SAS program FASTCLUS.

(2) Each of the clustering methods (Ward's average linkage, complete linkage, and single linkage) was used to create the six clusters. The FASTCLUS procedure was then used to relocate the law schools at the same level.

The Rand (1971) c statistic was then calculated to evaluate how well the different methods converged on a final clustering solution. *See* W.M. Rand, *Objective Criteria for the Evaluation of Clustering Methods*, 66 Journal of the American Statistical Association 846 (1971). The data showed substantial though not perfect convergence. The clustering from Ward's 6-to-6 solution (i.e., a six-cluster solution generated from the Ward's method, followed by a relocation algorithm that used the Ward six cluster solution centroids as starting seeds) correlated very highly with the results from the other solutions, and was used to create the clusters reported in the present study. *See* J.H. Ward, *Hierarchical Grouping to Optimize an Objective Function*, 58 Journal of the American Statistical Association 236 (1963).

As an illustration of the differences among clusters , the average scores on each of the clustering variables for schools in each cluster are shown in the following table:

	Cluster					
Variable	3	5	4	2	1	6
Tuition	3,481	6,141	11,428	11,153	13,659	3,136
Enrollment	606	516	797	1,466	704	347
Selectivity	0.28	0.5	0.34	0.26	0.17	0.33
Percent minority	0.15	0.08	0.12	0.19	0.2	0.58
Faculty/student ratio	21.14	21.64	24.73	28.14	22.04	17.77
LSAT	37.65	32.29	35.51	39.53	42.06	29.25
UGPA	3.29	3.05	3.09	3.34	3.5	2.86
Percent Private	4	56	98	60	88	29
Number of Schools	53	18	19	21	52	8

Note that classification of schools by type of control (i.e., public or private) was considered as a potential clustering variable, but it was not included because it was so highly correlated with tuition. For a detailed discussion of the process for selecting clustering variables, *see* Wightman, cited at the beginning of this note.

21. There are two methodological alternatives to logistic regression when the outcome variable is dichotomous: standard multiple regression using the dichotomous pass/fail variable as the outcome, or discriminant analysis. When data are truly dichotomous, using standard linear regression tends to violate the assumption of homogeneity of variance and also produces probabilities outside the range of 0 to 1. Discriminant analysis depends on very restrictive assumptions of normality for the dependent variables in the model, and it too can produce probabilities outside the range of 0 to 1. For these reasons, standard multiple regression and discriminant analysis were rejected as data analysis methods for this study.

22. For a more complete discussion of binary-response model methodology, *see generally* D.R. Cox and E.J. Snell, Analysis of Binary Data. London: Chapman and Hall (2nd ed., 1989).

Two alternative methods for developing logistic regression models were evaluated. First, bar examination outcome data were combined across states, ignoring possible differences from state to state, and a "probability of passing" model was produced using a binary response model logistic regression procedure. That is, the dependent variable took on one of the two possible values—pass or fail. For the data analyzed in this study, dependent variable equals "P" if the applicant passed and "F" if the applicant failed. The linear logistic model has the form

$$\text{logit}(p) = \log(p/(1-p)) = \alpha + \beta x$$

where, for the model specific to this study,

- x is a vector of the explanatory variables (e.g., LGPA or LSAT scores)
- p is the probability that the applicant passed given his or her scores on the selected explanatory variables tested in the model ($\Pr(Y = P \mid \mathbf{x})$)
- α is the intercept parameter
- β is the vector of slope parameters

Using the logit estimate produced by the logistic model described above, the probability of each individual applicant passing was calculated as follows:

$$p = e^{\text{logit}(p)} / (1 + e^{\text{logit}(p)}).$$

In the second method, the logistic regression model was developed separately for each jurisdiction for which there was sufficient data. Separate models were evaluated in response to a recognition that there are differences in difficulty of passing the bar among different jurisdictions. There are two reasons for analyzing the data separately by jurisdiction. First, differences in pass/fail criteria among jurisdictions might mask the importance of some variables in explaining outcomes. Second, factors that might be important in explaining pass or fail outcomes in some jurisdictions might be of little or no value in others.

Several methods for evaluating the fit of the models using both data combined across jurisdictions and separate models for each jurisdiction were employed to determine the adequacy of a model to predict bar passage outcomes. A likelihood-ratio chi-square test was used to test the joint significance of the selected set of explanatory variables used in the model, as well as to evaluate any improvement realized from adding additional variables to the models. The overall correlations between the predicted bar examination outcome based on each logistic regression model and the actual outcome also were calculated. As an additional method to evaluate the association of predicted probabilities and observed responses, the percentage of concordant pairs was calculated. Concordance indicates that the order of the probabilities predicted by a model is consistent with observed outcomes. To calculate the percentage of concordant pairs, every examinee who passed was paired with each examinee who failed so that every possible pairing of passing and failing examinees was formed. For each pair, if the person who passed had a higher predicted probability of passing than did the person who failed, the pair was recorded as concordant. If the person in the pair who passed did not have a higher predicted probability of passing than did the person who failed, the pair was discordant.

In addition to examining the chi-square statistic, which provided information about the full model, the estimated parameters for each of the factors included in the model also were evaluated. For the models tested in this study, the Wald statistic, which is distributed as a chi-square, was used to test the significance of individual variables in the model. The Wald statistic is the square of the ratio of each coefficient to its

standard error. This chi-square test for individual variables indicates whether the contribution for each variable is statistically significant given that the other variables are already in the model.

A final goal of the regression analyses was to evaluate the utility of the model(s) for explaining bar passage outcomes for examinees from different ethnic groups. After the models that best fit the observed data were identified, ethnicity was added as a categorical variable and improvement in the model was evaluated.

Coding Methods for Categorical Variables. Two of the variables included in some of the logistic regression models to explain bar examination outcome—ethnicity and law school cluster—are categorical (i.e., nonordered) variables. In order to evaluate these variables in correlation and logistic regression analyses, a dummy-coding scheme was used. Dummy coding is a method for assigning group membership to each element of a set of observations from mutually exclusive subsets. To accomplish this coding, a set of new variables must be created. That is, an observation is coded 1 if it is a member of the category and 0 if not. When ethnicity was used as a simple correlate with bar examination outcome, each ethnic category of sufficient size was correlated separately, using a code of 1 if the subject was a member of that ethnic group and 0 if she was not. When ethnicity was entered into the logistic regression equations, all categories were coded as indicator variables and entered into the equation simultaneously. If dummy coding is used with categorical variables, the statements that can be made about the effect of a particular category (e.g., black or Hispanic) are only in comparison to some other category. That category is the reference category and is coded 0 for all cases. For the ethnic group analyses in this report, the reference category is "white".

Cluster was treated as a categorical variable in this study. Seven law school characteristics, previously described, were considered simultaneously in order to form the clusters. Schools were grouped together on the basis of similarity on those seven variables. For this study, clusters were assigned numbers corresponding to their rank order on either of two of the seven clustering variables, LSAT score and UGPA, to aid in interpreting some of the data.[23] When clusters were entered into logistic regression equations in which LSAT scores and grades were already variables, any sorting of clusters based on those variables would already be taken into account.

Because clusters, like ethnicity, have multiple categories (i.e., there are six clusters), an indicator-variable coding scheme also was used for this variable. Cluster 3 was selected as the reference variable for this coding.[24] Thus, any change in the odds of passing the bar examination associated with the five other clusters is interpreted as a comparison to the odds for students graduating from cluster 3 schools.

Results

Summarizing Data About Jurisdictions

The first summary data presented in this report examine the distribution of study participants across jurisdictions as well as overall pass/fail outcomes within individual jurisdictions. These data are of interest for two reasons: (1) to determine how the participants in this study are distributed relative to typical national distributions of examinees and (2) to evaluate similarities and differences in distributions among ethnic groups across jurisdictions. A particular interest is ethnic group distribution across jurisdictions that differ substantially with respect to the proportion of examinees passing the bar examination.

23. For these data, the same cluster ordering is obtained regardless of whether LSAT or UGPA is used as the sorting variable.

24. *See* "Adding Law School Cluster to the Model," *infra* page 41, for an explanation of why cluster 3 was selected as the reference category.

Summarizing the Distribution of Study Participants Across Jurisdictions. Data summarizing the distribution of examinees across jurisdictions are presented in Table 1. These data provide a point of comparison between examinees from an intact class, as defined by participants in this study, and examinees from multiple classes who take the bar examination at a single administration, as defined by the July 1994 administration data. In general, the number of applicants sitting for a bar examination varied substantially from one jurisdiction to another. Variability among jurisdictions with respect to overall number testing, percentage passing, and number testing broken down by ethnic group is explored in this section. The first column of Table 1 shows the percentage of study participants who took their first examination in each jurisdiction. The percentages in column 1 include all study participants for whom bar data were available. Thus the administration dates range over several years. These percentages can be compared with the percentage of July 1994 first-time takers who sat for the bar in each jurisdiction, as reported by the National Conference of Bar Examiners.[25] July 1994 national administration data were chosen for comparison because more study participants took their first bar examination on that date than on any other. The proportions of July 1994 first-time takers for individual jurisdictions, shown in column 2 of Table 1, were calculated by dividing the number of first-time takers reported by each jurisdiction by the total number of July 1994 first-time takers only in those jurisdictions represented in this study. (Proportion was converted to percentage.) Percentage was calculated in order to compare, across jurisdictions, the relative distribution of graduates from the 1991 law school entering class with the distribution observed among all first-time examinees at a single bar-administration date. Perfect correspondence was not expected for several reasons. First, this study includes only ABA-approved law schools. Non-ABA-approved schools are concentrated in a small number of jurisdictions, and five of them test applicants from non-ABA-approved schools in a relatively substantial number. These are Alabama, California, Georgia, Massachusetts, and Texas. Additionally, individual jurisdictions report first-time takers of their examinations without reference to simultaneous applications to other jurisdictions or previous failing attempts in other jurisdictions. In this study, an individual who applied in more than one jurisdiction is counted only once.[26]

25. "1994 Statistics," *The Bar Examiner*, vol. 64-2, pages 7-16, (1995).

26. *See* "Participants," *supra* page 6.

TABLE 1

Percentages of first-time takers and first-time passers among the fall 1991 entering class study sample by jurisdiction compared with the percentages of all first-time takers and first-time passers who sat for the bar in each jurisdiction in July 1994

Jurisdiction	% of Study Sample	% of July '94 National Administration	% Pass in Study Sample	% Pass at July '94 National Administration
AK	0.2	0.18	82.22	77
AL	1.2	0.93	95.00	83
AR	0.4	0.46	100.00	68
AZ	1.3	1.30	89.80	85
CA	11.6	11.85	84.48	77
CO	2.1	1.44	85.56	87
CT	1.6	2.14	99.47	90
DC	0.1	0.11	57.58	81
DE	0.1	NA	63.64	NA
FL	5.8	4.37	89.70	89
GA	3.6	1.37	94.40	82
IA	0.8	0.53*	78.14	82*
ID	0.4	0.30	83.52	78
IL	6.8	5.12	98.22	96
IN	1.6	1.09	87.70	87
KS	0.9	0.72	94.76	80
KY	1.1	0.79	84.27	83
LA	1.2	1.40	70.28	70
MA	3.6	4.85	88.02	88
MD	3.1	2.77	77.68	78
ME	0.3	0.32	91.55	80
MI	2.6	1.99	79.11	69
MN	1.9	1.53	92.33	93
MO	2.3	1.60	97.01	95
MS	0.7	0.43	73.89	72
MT	0.0	0.27	100.00	92
NC	1.9	1.44	93.11	93
ND	0.1	0.15	79.41	84
NE	0.5	0.47	98.13	95
NH	0.3	0.37	80.65	84
NJ	8.9	8.96	87.87	83
NM	0.4	0.53	78.43	82
NV	0.1	0.89	90.32	85
NY	8.9	15.37	87.86	86
OH	3.6	2.77	94.31	94
OK	0.8	0.75	91.15	87
OR	0.6	0.96	83.11	80
PA	3.0	7.06	96.69	90
RI	0.2	0.24	76.32	80
SC	0.7	0.76	95.21	93
SD	0.2	0.17	91.49	93
TN	1.2	1.08	87.18	82
TX	7.5	4.88	87.78	84
UT	0.7	0.47	90.17	87
VA	2.3	2.33	81.49	77
VT	0.0	0.20	90.91	84
WA	1.4	1.50	89.34	75
WI	0.4	0.39	95.18	95
WV	0.6	0.39	85.42	84
WY	0.1	0.05	70.59	77

*June administration.

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The data in Table 1 show that, overall, the distribution of the participants in this study across jurisdictions tends to be similar to the distribution patterns of bar applicants at a single national administration. The most notable deviation is New York, where 15.37 percent of all the July 1994 first-time takers tested, but only 8.9 percent of the first-time takers in this study tested. This discrepancy is partly attributable to the large percentage of New York applicants who attended law school outside the United States (11 percent in 1994).[27] It also may be partly due to the number of study participants who tested in another jurisdiction at the same time they tested in New York. All of those who failed in New York but passed in another jurisdiction were reported in the other jurisdiction, as were a random sample of those who passed in both jurisdictions.[28] Deviation also is evidenced in Pennsylvania, where 7.1 percent of July 1994 first-time takers tested, compared with 3.0 percent of the study participants. Pennsylvania is one of the jurisdictions that did not provide data for this study, and two of the six law schools in Pennsylvania did not participate, thus slightly diminishing the representation of Pennsylvania bar results in the study sample. Despite the few discrepancies noted, the study data are fairly consistent with the July 1994 data in demonstrating substantial variation in the number of applicants to different bars. The states with the largest numbers of applicants were California, Florida, Illinois, New Jersey, New York, and Texas. These six jurisdictions administered first-time bar examinations to just over half of the participants in the study. The other half is spread across the other 44 jurisdictions.

There also is variation among the jurisdictions in the proportion of first-time test takers who passed the bar. Table 1 shows first-time pass rates for participants in this study and compares them to first-time pass rates for the July 1994 examination. These data highlight differences that result from working with a single entering law school class rather than a single administration of the bar. Comparison of study data with July 1994 national data shows that passing rates for study participants tend to be slightly higher than the overall first-time pass rates in most jurisdictions. A variety of factors contribute to this outcome. First, academic indicators suggest that the fall 1991 entering class was among the academically most able ever to enter.[29] A higher pass rate would be expected when they are considered as an intact group than when they are mixed with graduates from other years. Also, the pass rates reported by jurisdictions include data from graduates of non-ABA-approved U.S. law schools and foreign law schools. Klein and Bolus presented data showing that in California, the only state where data from that kind of research have been reported, non-ABA-approved law school graduates tended to pass the bar at lower rates than did graduates from ABA-approved schools.[30] Finally, when study participants tested in more than one jurisdiction and passed in one but failed in the other, they were counted as a pass. Because each study participant is represented only once in Table 1, these participants are not included in the data of the state in which they failed. Moreover, if they failed in more than one jurisdiction, they are counted as a failure only once in the study data, but are counted as a failure in each jurisdiction in the July 1994 data. Despite these differences, between-group variability (i.e., among pass rates reported by different jurisdictions) is evidenced in both data sets. Pass rates were substantially higher in some jurisdictions than in others. More importantly, the discrepancies between the two data sets suggest that for many questions about bar pass rates among law school graduates, data from an intact class are more appropriate as a unit of analysis than are data from an intact administration.

27. *See* "1994 Statistics," *supra* note 25, at 11.

28. *See* "Participants," *supra* page 6, for a description of the procedure adopted to associate a single jurisdiction with an examinee who passed in more than one jurisdiction.

29. Law School Admission Council, National Statistical Report, 1986-87 through 1990-91. Newtown, PA (1992). *See also* Wightman, *supra* note 18 at 1 (describing applicants to the fall 1991 law school class) and at 17 (providing LSAT score data for test takers, applicants, and the 1991 entering class).

30. Stephen P. Klein and Roger Bolus, Comparisons of eventual passing rates in the 1985 and 1986 cohorts. GANSK and Associates, October 30, 1988 at 4.

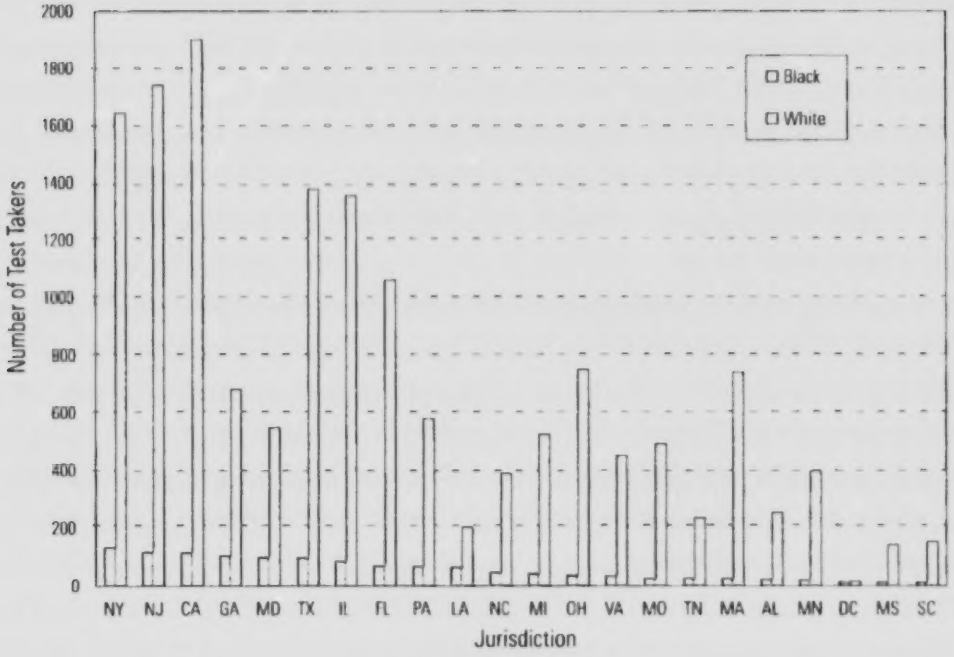

FIGURE 1. *Distribution of black and white first-time bar examination takers across 22 jurisdictions that test the largest number of black applicants (in black applicant number order)*

Among questions related to the variability in bar passage rates among jurisdictions were several about how bar applicants from different ethnic groups were distributed across jurisdictions. One such question is whether applicants from some ethnic groups disproportionately tended to take the bar in jurisdictions where pass rates were more stringent. Members of the largest nonwhite ethnic group, both in the 1991 entering class and in the subset for whom bar examination data were available, were black, and that group was substantially larger than the second largest group—Asian Americans.[31] Figure 1 shows the distribution of black and white study participants across the 22 jurisdictions in which the largest numbers of black applicants took their first bar examination. The jurisdictions are sorted by the number of black test takers. Sorting jurisdictions in this way produced a smooth decline in number of black test takers, but resulted in a fairly jagged distribution for white test takers. Thus, black test takers were not simply represented across jurisdictions by numbers that were proportional to white test takers. Figure 1 also demonstrates how very small the number of black first-time examinees was relative to the number of white examinees in every jurisdiction. Table 2 presents the data from which Figure 1 was constructed and also shows the counts and percentages by jurisdiction for members of the other ethnic groups included in this study.[32] This table illustrates that the number and percentage of examinees from different ethnic groups were not proportionally parallel across jurisdictions. For example, a third of Asian Americans tested in California, as did a third of

31. *See* Wightman, *supra* note 18 at 13 (table 1), and at 18 (note 11) (describing the ethnic make-up of the fall 1991 entering law school class). *See also* "Ethnic Group Comparisons," *infra* page 27 (describing the ethnic make-up of the group of study participants for whom bar exam data are available).

32. Both Hawaii and Virgin Islands are included in Table 2 in order to account for 100 percent of the study participants.

Mexican Americans. Another 35.7 percent of Mexican Americans tested in Texas. Thus only two jurisdictions account for 68 percent of the total number of Mexican American test takers among these study participants. More than a quarter of those test takers who categorized themselves as "other Hispanic" tested in Florida and 20 percent of American Indians tested in California.

These first-time bar examination data demonstrate that members of the fall 1991 entering class distributed themselves very unevenly across states when they applied for admission to the bar. It is somewhat difficult to formulate trends for different ethnic groups and understand their impact when dealing with such a large number of individual jurisdictions. Additionally, many jurisdictions participated in this study only on the condition that they would not be individually identified in reported data analyses. For both these reasons, jurisdictions were combined into geographic groups as a way to summarize and analyze state data. Two alternative methods for forming geographic groups were considered—the "regions" and the geographically larger "regional groups" used by LSAC in the Regional Statistical Reports it prepares for member law schools. Because regional groups are so large that they mask some important trends, summary data are presented here by regions. Parallel data presented by regional group are found in Appendix D.

TABLE 2

Number and percentage of study participants by ethnic group and jurisdiction in which they took their first bar examination (presented in descending order of black examinees)

	Black		White		American Indian		Asian American		Hispanic		Mexican American		Puerto Rican	
Jurisdiction	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group
NY	133	9.7	1,644	8.5	8	7.2	133	13.9	47	9.0	10	2.5	32	25.0
NJ	117	8.6	1,742	9.0	3	2.7	88	9.2	45	8.7	2	0.5	26	20.3
CA	115	8.4	1,900	9.9	21	18.9	326	34.1	78	15.0	131	32.9	13	10.2
GA	104	7.6	682	3.5			17	1.8	11	2.1	1	0.3	2	1.6
MD	99	7.2	549	2.8	1	0.9	34	3.6	10	1.9	3	0.8		
TX	97	7.1	1,380	7.2	10	9.0	49	5.1	45	8.7	142	35.7	1	0.8
IL	85	6.2	1,356	7.0	3	2.7	64	6.7	22	4.2	19	4.8	7	5.5
FL	70	5.1	1,062	5.5	3	2.7	27	2.8	135	26.0	6	1.5	12	9.4
PA	67	4.9	580	3.0			19	2.0	15	2.9	2	0.5	1	0.8
LA	65	4.8	205	1.1					9	1.7	1	0.3	3	2.3
NC	48	3.5	389	2.0	3	2.7	5	0.5	3	0.6			1	0.8
MI	44	3.2	526	2.7	3	2.7	10	1.0	8	1.5	3	0.8	2	1.6
OH	38	2.8	751	3.9	1	0.9	22	2.3	3	0.6	2	0.5	2	1.6
VA	35	2.6	452	2.3	2	1.8	19	2.0	2	0.4	1	0.3	3	2.3
MO	27	2.0	494	2.6	1	0.9	6	0.6	2	0.4	2	0.5		
TN	27	2.0	236	1.2	1	0.9			4	0.8	1	0.3		
MA	26	1.9	741	3.8	4	3.6	32	3.3	11	2.1	3	0.8	8	6.3
AL	22	1.6	254	1.3	1	0.9	1	0.1	1	0.2				
MN	20	1.5	395	2.0	1	0.9	13	1.4	1	0.2	5	1.3	2	1.6
DC	13	1.0	16	0.1			1	0.1	1	0.2			1	0.8
MS	12	0.9	141	0.7	1	0.9	1	0.1	1	0.2				
SC	12	0.9	154	0.8	1	0.9								
CO	12	0.9	420	2.2	4	3.6	8	0.8	15	2.9	13	3.3	2	1.6
IN	11	0.8	353	1.8	1	0.9	1	0.1	1	0.2	2	0.5	1	0.8
CT	10	0.7	344	1.8			9	0.9	5	1.0			4	3.1
AZ	10	0.7	258	1.3	4	3.6	9	0.9	8	1.5	15	3.8		
WA	8	0.6	277	1.4	1	0.9	18	1.9	4	0.8	3	0.8	1	0.8
KY	7	0.5	232	1.2	1	0.9	3	0.3	3	0.6	1	0.3	1	0.8
RI	4	0.3	33	0.2									1	0.8
IA	4	0.3	171	0.9			4	0.4			3	0.8		
KS	4	0.3	194	1.0	3	2.7	5	0.5	1	0.2	1	0.3	1	0.8
AR	4	0.3	84	0.4			1	0.1			1	0.3		
NE	4	0.3	101	0.5					1	0.2				
WV	3	0.2	139	0.7			1	0.1	1	0.2				
NM	3	0.2	62	0.3	6	5.4	2	0.2	9	1.7	16	4.0		
WI	3	0.2	78	0.4			1	0.1	1	0.2				
OR	2	0.1	135	0.7	2	1.8	3	0.3	2	0.4	1	0.3		

(continued)

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TABLE 2 (continued)

Jurisdiction	Black		White		American Indian		Asian American		Hispanic		Mexican American		Puerto Rican	
	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group	Number	% of Group
NH	1	0.1	58	0.3			1	0.1	1	0.2				
OK	1	0.1	179	0.9	10	9.0			2	0.4				
VT			11	0.1										
VI			1	0.0										
WY			16	0.1							1	0.3		
MT			5	0.0	1	0.9								
ID			83	0.4	2	1.8	3	0.3	1	0.2	2	0.5		
AK			40	0.2	1	0.9	3	0.3	1	0.2				
NV			26	0.1	2	1.8			3	0.6				
HI			6	0.0			13	1.4						
DE			31	0.2							1	0.3	1	0.8
UT			154	0.8	1	0.9	5	0.5	6	1.2	4	1.0		
ND			32	0.2	1	0.9								
SD			46	0.2	1	0.9								
Total	1,368		19,285		111		957		520		398		128	
Percent		5.7		80.7		0.5		4		2.2		1.7		0.5

TABLE 3

Number and percentage of study participants by ethnic group and geographic region in which they took their first bar examination

Region		Ethnic Group								
	Frequency Column Percent	American Indian	Asian American	Black	Mexican American	Puerto Rican	Hispanic	White	Other	Total
Far West										
	Number	22	359	123	134	14	85	2,209	101	3,047
	Percent*	20.56	37.36	8.99	33.67	10.94	16.35	11.46	31.66	13.2
Great Lakes										
	Number	9	111	201	31	14	36	3,459	44	3,905
	Percent*	8.41	11.55	14.69	7.79	10.94	6.92	17.94	13.79	16.92
Midsouth										
	Number	7	64	232	7	7	24	2,044	23	2,408
	Percent*	6.54	6.66	16.96	1.76	5.47	4.62	10.60	7.21	10.43
Midwest										
	Number	6	15	39	6	1	4	1,038	7	1,116
	Percent*	5.61	1.56	2.85	1.51	0.78	0.77	5.38	2.19	4.83
Mountain West										
	Number	18	27	25	51	2	39	998	11	1,171
	Percent*	16.82	2.81	1.83	12.81	1.56	7.50	5.18	3.45	5.07
Northeast										
	Number	11	240	317	14	59	107	3,977	80	4,805
	Percent*	10.28	24.97	23.17	3.52	46.09	20.58	20.62	25.08	20.81
New England										
	Number	6	42	42	3	13	18	1,243	17	1,384
	Percent*	5.61	4.37	3.07	0.75	10.16	3.46	6.45	5.33	6.00
Northwest										
	Number	3	6	2	1	0	3	175	3	193
	Percent*	2.80	0.62	0.15	0.25	0.00	0.58	0.91	0.94	0.84
South Central										
	Number	20	50	167	144	4	56	1,848	13	2,302
	Percent*	18.69	5.20	12.21	36.18	3.13	10.77	9.58	4.08	9.97
South East										
	Number	5	47	220	7	14	148	2,293	20	2,754
	Percent*	4.67	4.89	16.08	1.76	10.94	28.46	11.89	6.27	11.93
Total										
	Number	107	961	1,368	398	128	520	19,284	319	23,085
	Percent**	0.46	4.16	5.93	1.72	0.55	2.25	83.53	1.38	100.00

*Percent shows the percentage of the total number in each group.

**Percent shows the row percentage.

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The jurisdictions were divided into ten regions designated Northwest, Far West, Mountain West, Midwest, Great Lakes, South Central, Midsouth, Southeast, Northeast, and New England.[33] The distribution of first-time bar examination takers by ethnic group is summarized for each of the ten regions in Table 3. This geographic breakdown shows that the Northeast was the region selected by the largest number of study participants for their first bar examination, and it represents the largest or second largest proportion of study participants from each identified ethnic group except American Indians and Mexican Americans. The smallest number of study participants took their first bar exam in the Northwest, consistent with the distribution of July 1994 first-time national data shown in Table 1. The smallest proportion of minority study participants was in the Midwest; 93 percent of the first-time test takers in this region were white.

These data also show that the largest proportion of Asian American law school graduates from the fall 1991 entering class took their first bar examination in the Far West region, as did approximately one third of the Mexican American graduates. The Far West showed the most racial and ethnic diversity among these first-time examinees—72.5 percent of them were white.

33. The regions are defined as follows:

New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Northeast	New Jersey, New York, Pennsylvania
Midsouth	Delaware, District of Columbia, Kentucky, Maryland, North Carolina, Tennessee, Virginia, West Virginia
Southeast	Alabama, Florida, Georgia, Mississippi, South Carolina
Great Lakes	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
Midwest	Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota
South Central	Arkansas, Louisiana, Oklahoma, Texas
Mountain West	Arizona, Colorado, Idaho, Montana, New Mexico, Utah, Wyoming
Northwest	Alaska, Oregon, Washington
Far West	California, Hawaii, Nevada

TABLE 4

Number and percentage of study participants by region and pass or fail outcome of their first-time bar examination

	First-time Bar Exam Outcome		
Region	Pass	Fail	Total**
Far West			
Number	2,596	454	3,050
Percent*	85.11	14.89	13.20
Great Lakes			
Number	3,621	286	3,907
Percent	92.68	7.32	16.91
Midsouth			
Number	2,006	407	2,413
Percent	83.13	16.87	10.44
Midwest			
Number	1,036	80	1,116
Percent	92.83	7.17	4.83
Mountain West			
Number	1,012	159	1,171
Percent	86.42	13.58	5.07
Northeast			
Number	4,286	522	4,808
Percent	89.14	10.86	20.81
New England			
Number	1,257	129	1,386
Percent	90.69	9.31	6.00
Northwest			
Number	160	33	193
Percent	82.90	17.10	0.84
South Central			
Number	1,989	314	2,303
Percent	86.37	13.63	10.00
Southeast			
Number	2,509	246	2,755
Percent	91.07	8.93	11.93

*Percent shows the percentage within each region who passed and failed.

**Percent shows the percentage of study participants who took their first bar exam in each region.

The regions also were examined with respect to differences in first-time pass rates. Table 4 shows the number and percentage of examinees passing their first bar attempt for each of the ten regions. Pass rates were significantly different among regions, but the differences were not as large as those found among individual jurisdictions. The lowest pass rates were found in the Northwest and the Midsouth, the highest in the Midwest. The Midwest is the region that tested the largest percentage of white examinees.

Analysis of Relative Differences in Difficulty of Passing the Bar Among Jurisdictions. Data presented in Table 1 suggest that it may be easier to pass the bar in some jurisdictions than in others. The data also show that bar examinees of color tend to be concentrated in limited numbers of jurisdictions. Additionally, the national summary of pass/fail data to be presented in subsequent sections collapses data across jurisdictions with no regard for the relative difficulty with which a pass could be obtained. The combination of these facts leads to questions about how great the differences in difficulty of passing among jurisdictions might be.

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Comparing the relative difficulty of gaining admission among different jurisdictions is not straightforward, and the data presented herein are limited only to some summary statistics for variables that have been shown to be related to differences among jurisdictions. The problem in quantifying relative difficulty across jurisdictions is partly a result of differences in both examination content and grading rubrics. Not only are the state-specific questions unique to each jurisdiction, but the relative weights assigned to the various portions of the bar examination vary from jurisdiction to jurisdiction, as does the use of compensatory and conjunctive models when assessing different parts of the exam. These factors are further complicated by differences in academic achievement among the applicants to different bars.

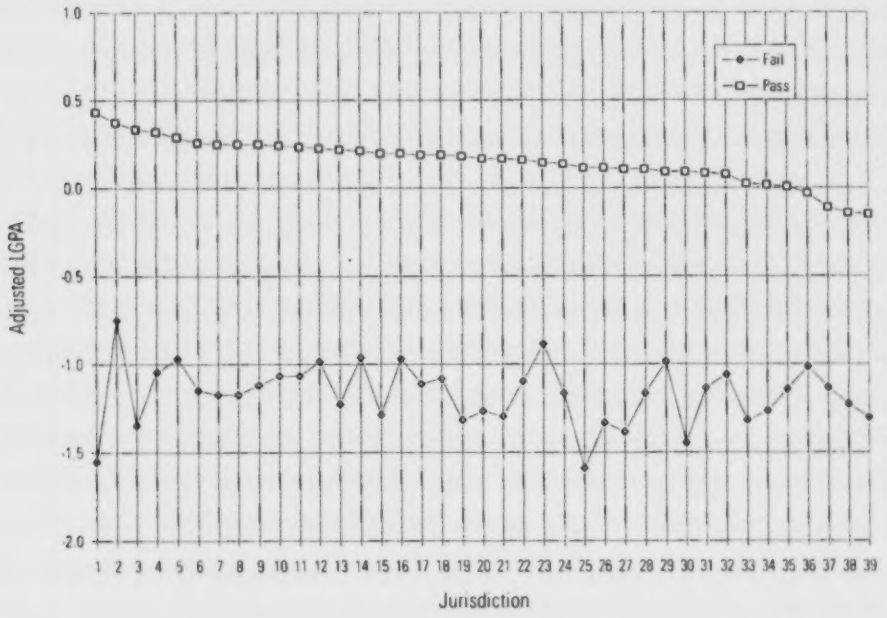

FIGURE 2. *Adjusted LGPA means for examinees passing and failing their first bar exam, by jurisdiction*

Summary statistics on selected variables related to bar passage were examined separately by jurisdiction for examinees who passed and for examinees who failed. Statistics are reported only for the 39 jurisdictions that had sufficient data to support the individual jurisdiction analyses that are reported in subsequent sections of this report.[34] Figure 2 shows the mean adjusted LGPA for those who passed and those who failed in each jurisdiction. The data are sorted in descending order on adjusted LGPA for passing examinees and jurisdictions are numbered from 1 to 39 based on that sort. Figure 2 shows little variation on adjusted LGPA for passing examinees among the majority of jurisdictions, but also shows for a small number a small rise on the high end and small decline on the low end. There is a difference of less than three-quarters of a standard deviation between the highest and the lowest jurisdictions. The data also reveal that the means for the failing candidates fluctuate far more than the means for the passing candidates and do not decrease in the same pattern across jurisdictions. These fluctuations are at least partly attributable to the small numbers of failing examinees in some jurisdictions. There is a significant difference in mean LGPA between passing and failing examinees in each jurisdiction and the highest mean LGPA for failing examinees (in jurisdiction 2) is nearly a half standard deviation below the lowest mean for passing examinees (in jurisdiction 39).

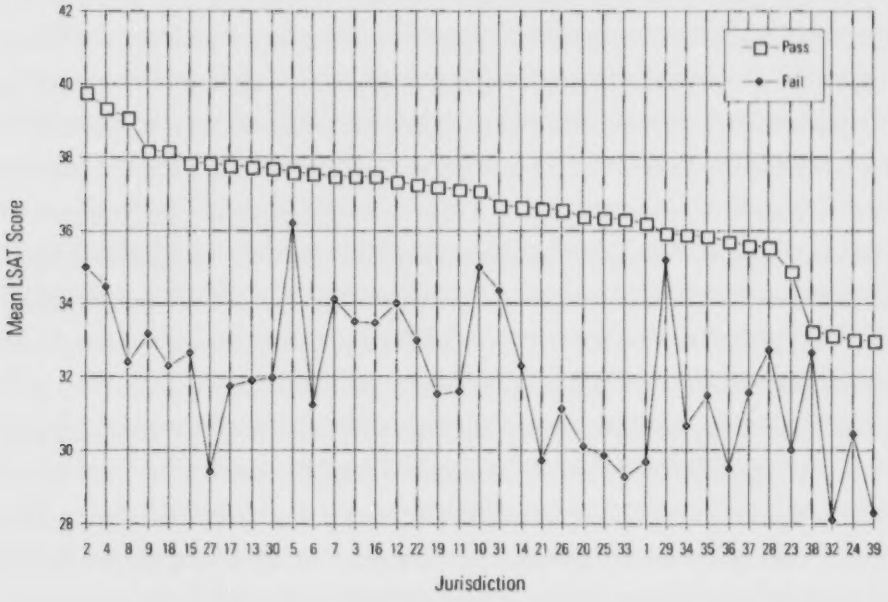

FIGURE 3. *LSAT means for examinees passing and failing their first bar exam, by jurisdiction*

34. *See* "Analysis of Relative Differences in Difficulty of Passing the Bar Among Jurisdictions," *supra* page 21 (describing analyses that were done separately by jurisdiction).

Figure 3 shows mean LSAT scores for passing and failing examinees by jurisdiction, again presented in descending order for passing candidates. The numbers assigned to the jurisdictions in Figure 2, in which they are sorted by LGPA of passing examinees, were retained to allow comparison of relative positions of the jurisdictions on the two variables. One result of sorting on mean LSAT score is that the order of the jurisdictions was altered, as can be seen by the shifting of jurisdictions' numbers on Figure 3's *x*-axis. The LSAT data appear to be more variable than the LGPA data, but that is partly a reflection of scale differences.[35] Even so, the difference between the highest and lowest mean LSAT across jurisdictions is just over one standard deviation—somewhat larger than the difference in LGPAs. Like the LGPA data, there is little difference across many of the jurisdictions, but the extremes are considerably more disparate. Also similar to the LGPA data, the LSAT means for failing examinees fluctuate more than the means for passing examinees and the means for failing examinees do not follow a linear trend or appear equidistant from the means of passing examinees across jurisdictions. Unlike the LGPA data, the means for failing candidates are not always significantly lower than the means for passing candidates, and there are several instances among these data pairs where the mean for the failing examinees in one jurisdiction exceeds the mean for passing examinees in other jurisdictions. (Compare, for example, the failing LSAT mean for jurisdiction 10 to the passing mean for jurisdiction 39.) Even so, for the majority of jurisdictions, there is a large and statistically significant difference between the LSAT means for passing and failing examinees. The variability and lack of consistency in LSAT data are likely related, at least in part, to the lower correlation between LSAT score and bar examination outcome than between LGPA and bar outcome.[36] The variability in means of failing examinees also may be related to the small number of failing examinees in some of the jurisdictions.

The final comparisons look at Multistate Bar Examination (MBE) scale-score means for passing and failing examinees across jurisdictions. MBE scores were available for approximately 18,000 of the 23,000 study participants for whom pass or fail outcomes were available. Twenty-five jurisdictions had a sufficiently large number of passing and failing examinees with MBE scores to include them in these comparisons.

35. That is, the LSAT data are shown on the LSAT scale, which had a mean of 36.8 and a standard deviation of 5.5, whereas the LGPA data are shown on a scale that has a mean of 0 and a standard deviation of 1.

36. *See* Table 13, *infra* page 37.

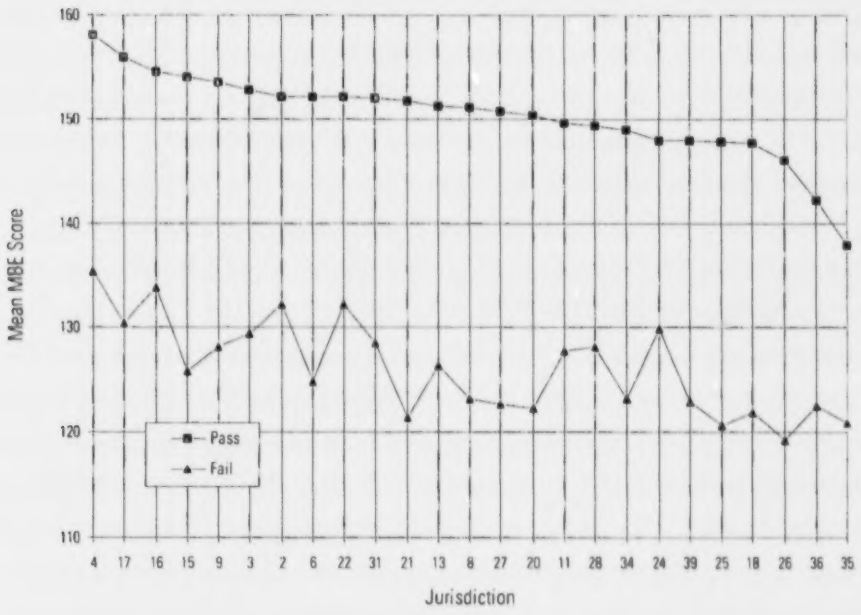

FIGURE 4. *MBE scaled-score means for examinees passing and failing their first bar exam, by jurisdiction*

Mean MBE scale scores for passing and failing candidates are shown in Figure 4. Again, the range of mean scores for passing examinees is relatively small among the majority of jurisdictions, but there are larger differences at the extremes. The descending trend in the means for passing examinees is slightly mirrored in the means for failing examinees. The MBE data are similar to the LGPA data in that the difference between passing and failing examinees within each jurisdiction is large and statistically significant. The highest mean MBE among failing examinees is approximately equal to the lowest mean for passing candidates. The data show that the lowest mean for passing examinees is approximately one third of a standard deviation lower than the next-lowest mean and is the only mean of passing candidates that is close to the mean of failing candidates. A caution in interpreting these data is that the importance of the MBE score is not consistent across jurisdictions. Some jurisdictions put less weight than others on the MBE score in determining pass or fail status. Additionally, some jurisdictions utilize a compensatory model, allowing a high score on the essay portion of the exam to compensate for a low score on the MBE portion, and vice versa.

Summarizing First-time Bar Passage Rates

The initial analyses of first-time bar results focussed on summary pass or fail outcomes independent of the jurisdictions in which the examination was taken. That is, only the outcome of pass or fail was examined; no consideration was given to potential differences in the difficulty of passing the bar from one jurisdiction to another. First-time bar result data were examined both to determine overall bar passage rates for selected subsets of the population and to attempt to identify factors that are related to pass or fail outcomes. Summary data are presented separately for gender and ethnic groups. They also are presented by law school group and by LSAT score group. These data show no significant differences in pass rates between women and men, but do show differences among ethnic groups. The data also show significant pass rate differences among different groups of law schools and between high and low scoring LSAT groups.

TABLE 5

Number and percentage of female and male study participants who passed their first bar examination, by ethnic group

	Gender Group	
Ethnic Group	Women	Men
American Indian		
Number	27	44
Percent*	65.85	66.67
Asian American		
Number	391	385
Percent	81.80	79.71
Black		
Number	527	313
Percent	62.51	59.73
Mexican American		
Number	132	170
Percent	76.30	75.56
Puerto Rican		
Number	43	46
Percent	71.67	67.65
Hispanic		
Number	178	211
Percent	71.20	78.15
White		
Number	7,499	10,226
Percent	91.54	92.21
Other		
Number	107	158
Percent	79.85	85.41
Total		
Number	8,904	11,553
Percent	87.53	89.42

*Percent shows the percentage of women and men within each ethnic group who passed their first bar examination

Gender Group Comparisons. Overall first-time pass rates were examined to investigate gender differences in bar examination outcomes. Although the difference between the women and men is statistically significant, this significance is due to the large sample size. The effect size ($w = .03$) is close to zero and not of any practical significance. When women and men were matched on ethnicity before their pass rates were compared, the outcome (i.e., pass or fail) was statistically independent of sex for every ethnic group. The percentage of women and men passing the bar examination on the first attempt is shown in Table 5 for the total group and separately by ethnic group.

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Ethnic Group Comparisons. Table 6 shows the proportion of examinees passing or failing their first bar examination across all jurisdictions, separately by ethnic group. Ethnic identity was not available for 17 of the 23,103 study participants for whom first-time results were obtained and these 17 participants are excluded from this and subsequent tables that present data by ethnic group.

TABLE 6

Number and percentage of study participants by ethnic group and first-time bar examination outcome

	First-time Bar Exam Outcome		
Ethnic Group	Pass	Fail	Total**
American Indian			
Number	71	36	107
Percent*	66.36	33.64	0.46
Asian American			
Number	776	185	961
Percent	80.75	19.25	4.16
Black			
Number	840	528	1,368
Percent	61.40	38.60	5.93
Mexican American			
Number	302	96	398
Percent	75.88	24.12	1.72
Puerto Rican			
Number	89	39	128
Percent	69.53	30.47	0.55
Hispanic			
Number	389	131	520
Percent	74.81	25.19	2.25
White			
Number	17,728	1,557	19,285
Percent	91.93	8.07	83.54
Other			
Number	265	54	319
Percent	83.07	16.93	1.38
Total			
Number	20,460	2,626	23,086
Percent	88.63	11.37	100.00

*Percent shows the percentage within each ethnic group who passed and failed.

**Percent shows the percentage of each ethnic group among the total group of first-time examinees.

As was true for the total group of study participants when they entered law school in fall 1991, the majority of the participants for whom bar exam data were available are white (83.5 percent among the bar examinees, compared with 82 percent in the 1991 entering class). The largest ethnic group difference between the proportion found in the fall 1991 entering class and the proportion of those who graduated and took a bar exam is among blacks. Specifically, among the total group of study participants, 6.8 percent were black, compared with 5.9 percent in the sample for which bar examination data were available. That difference is still rather small and is primarily attributable to the larger proportion of blacks found among those students who withdrew from law school.[37]

The proportion of examinees passing the bar exam the first time they took it differs significantly by ethnic group ($p < .001$). The effect size for data examining the relationship between ethnicity and bar outcome is .27, confirming that these differences are of practical as well as statistical significance.[38] Although the failure rate

37. *See* Linda F. Wightman, Women in Legal Education: A Comparison of the Law School Performance and Law School Experiences of Women and Men. Law School Admission Council Research Report, Newtown, PA (1996) at 105 and 145 (describing the ethnic distribution of women and men, respectively, who did not return to law school after their first year).

38. Because the sample size is so large, effect size is a more useful measure of significance than is the chi-square value. Effect size (w) = $\sqrt{\chi^2/N}$. w values of .1 typically are considered to be small effect sizes; values of .3 medium effect sizes. *See* J. Cohen, Statistical Power Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates (2d ed. 1988).

among black first-time takers makes the largest cell contribution to the overall chi-square statistic, the differences between pass rates for whites and pass rates for other ethnic groups are substantial. The relationship between ethnicity and pass or fail outcome remains statistically significant ($p < .001$) even when black examinees are excluded from the analysis.

Law School Cluster Comparisons. The observed differences in pass rates among ethnic groups are examined next by looking at the results jointly by law school group and by ethnic group. Law schools were grouped with other schools most like themselves.[39] Two of the variables used to group or "cluster" law schools were LSAT score and UGPA. The cluster numbers reported in this study result from sorting the original clusters by the median LSAT scores or median UGPAs of their entering students and then numbering them from 1 to 6.[40] The group of schools with the highest median was referred to as cluster 1 and the group with the lowest as cluster 6. The cluster data were sorted in this way because previous studies have shown that both LSAT and UGPA are related to bar examination outcome.[41]

TABLE 7

Number and percentage of study participants who passed the bar on the first attempt, by ethnic group and law school cluster

	Law School Cluster					
Ethnic Group	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
American Indian						
Number	6	13	27	12	10	2
Percent	66.67	72.22	62.79	70.59	76.92	33.33
Asian American						
Number	140	233	164	217	17	5
Percent	89.17	81.75	81.19	79.78	58.62	31.25
Black						
Number	107	152	258	156	28	139
Percent	81.06	64.14	65.82	52.35	45.16	56.50
Mexican American						
Number	37	77	89	65	7	26
Percent	82.22	82.80	77.39	69.15	87.50	61.90
Puerto Rican						
Number	21	21	9	[illegible]	4	3
Percent	84.00	80.77	50.00	64.58	57.14	75.00
Hispanic						
Number	58	94	81	113	32	11
Percent	89.23	80.34	72.97	67.26	80.00	57.89
White						
Number	1,569	3,179	4,990	6,324	1,356	219
Percent	96.44	92.98	94.44	91.26	82.73	78.78
Other						
Number	36	65	53	92	10	8
Percent	94.74	82.28	88.33	79.31	76.92	66.67
Total						
Number	1,974	3,834	5,671	7,010	1,464	413
Percent	94.09	89.71	91.10	88.25	80.84	66.29

39. *See* "Grouping Law Schools," *supra* page 8.

40. *See, supra,* page 11 (explaining this sorting).

41. *See, infra,* pages 37 and 38 (presenting and discussing the correlation between LSAT and bar examination outcome, as well as between UGPA and outcome, for data in this study).

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The number and percentage of examinees passing the first bar examination are presented for each cluster separately by ethnic group in Table 7. These data show significant variation not only among ethnic groups, but also among clusters. Ethnic group membership was significantly related to first-time bar examination outcome within each cluster. These relationships are both statistically and practically significant.[42] The significant relationship between ethnicity and first-time bar passage within each cluster is primarily, but not exclusively, attributable to the large proportion of white examinees passing, particularly relative to black and American Indian examinees. This is the same overall relationship that was observed when pass rates were examined for the total group independent of law school cluster.

The difference in percentage passing between white examinees and examinees of color is smallest among examinees from cluster 1 and cluster 5 schools, but even those differences are statistically significant. The effect sizes are $w = .21$ and .19, respectively. The data also show that as average LSAT or UGPA associated with a cluster decreases, the pass rates tend to decrease. These observations are illustrated in Figure 5 for Asian American, black, Hispanic, and white first-time test takers. American Indian, Mexican American, and Puerto Rican test takers are not included in this figure due to the small number of those students found in several of the clusters. Even among the groups included, it is important to take the sample size into account when viewing some of the trends. Most notably, the 58.6 percent pass rate for Cluster 5 Asian American test takers was calculated from bar examination data for only 29 study participants. Even though the overall number of Asian American study participants is fairly large, only three percent of them attended cluster 5 schools. Just 16 Asian American participants (1.7 percent) attended cluster 6 schools. Similarly, only 19 of the first-time bar examination takers who classified themselves as other Hispanic attended cluster 6 schools. In contrast, 246 blacks (18.7 percent) attended cluster 6 schools, thus providing much more stable estimates of the proportion passing.

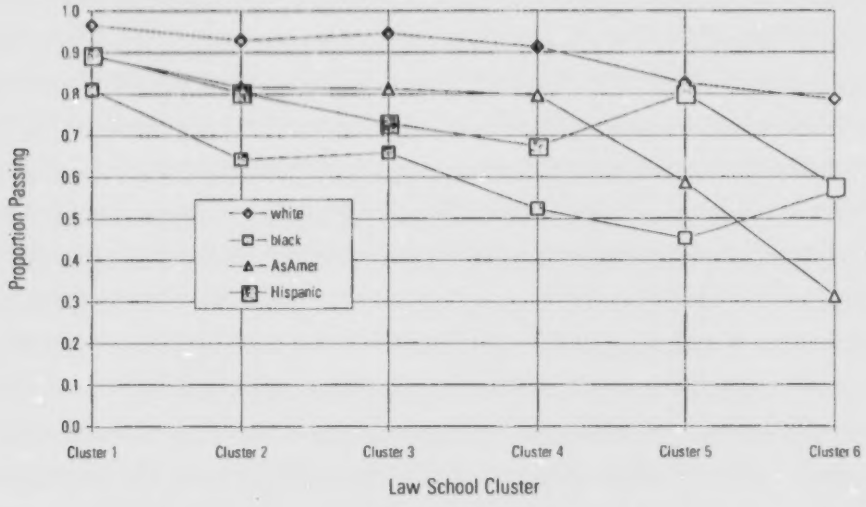

FIGURE 5. *Proportion of examinees passing their first bar exam by law school cluster for selected ethnic groups*

42. The number of American Indian and Puerto Rican students in several of the clusters results in an expected value of less than five for several cells, suggesting that the chi-square test may not be appropriate for data from these two groups. Chi-square results are reported here because the difference between black and white test takers is the primary contributor to the significance statistic and because calculation of the chi-square statistics for each cluster after eliminating these two groups yields essentially identical results. The effect size estimate (w values) ranged from .19 to .30.

These summary data suggest that law school characteristics may be related to bar examination outcome, but data in the format shown in Table 7 are not sufficient to confirm that conclusion. This is because academic credentials in the form of LSAT score and UGPA are confounded with law school cluster in the data shown in Table 7 and Figure 5. Differences in bar passage rates among different groups of law schools, after controlling for LSAT score and law school grades, are explored in greater detail in a subsequent section of this report.[43]

LSAT Mean-Group Comparisons. Next, LSAT scores were used to divide first-time bar examination takers into two groups for the purpose of comparing bar passage rates. Those with LSAT scores at or above the mean for the fall 1991 entering class (36.5) constituted one group, those with scores below the mean the other group. Pass rates for those with LSAT scores above and below the class mean are presented in Table 8.

TABLE 8

Number and percentage of applicants with LSAT scores at or above, and below the grand mean of the fall 1991 entering class who passed and failed their first bar examination, separately by ethnic group

	At or Above LSAT Mean		Below LSAT Mean	
Ethnic Group	Pass	Fail	Pass	Fail
American Indian				
Number	29	5	42	31
Percent*	85.29	14.71	57.53	42.47
Asian American				
Number	425	48	351	137
Percent	89.85	10.15	71.98	28.07
Black				
Number	149	20	691	508
Percent	88.17	11.83	57.63	42.37
Mexican American				
Number	98	11	204	85
Percent	88.91	10.09	70.59	29.41
Puerto Rican				
Number	34	4	55	35
Percent	89.47	10.53	61.11	38.89
Hispanic				
Number	159	19	230	112
Percent	89.33	10.67	67.25	32.75
White				
Number	10,860	528	6,868	1,029
Percent	95.36	4.64	86.97	13.03
Other				
Number	143	7	122	47
Percent	95.33	4.67	72.19	27.81
Total				
Number	11,897	642	8,563	1,984
Percent	94.88	5.12	81.19	18.81

*Percent shows the row percentage with each LSAT group.

The difference in pass rates between white students and students of color is substantially smaller among those who scored at or above the mean LSAT than among those who scored below the mean. For example, among those scoring at or above the mean, 95 percent of whites passed their first bar examination while 88 percent of blacks and 89 percent of Mexican Americans, Puerto Ricans, and other Hispanics did so. In contrast, 87 percent of whites scoring below the mean passed, while 58 percent of blacks and 61 to 71 percent of Mexican Americans,

43. *See* "Adding Law School Cluster to the Model," *infra* page 41 (evaluating the impact of adding law school cluster as a variable in a logistic regression model designed to explain bar examination outcomes).

Puerto Ricans, and other Hispanics did so. The larger discrepancy in pass rates among groups in the below-the-mean category is at least partly attributable to the relatively larger differences in LSAT means among ethnic groups in that category. For example, in the above-the-mean category, the mean LSAT for whites is 40.8 compared with means ranging from 39.6 to 41 for the other groups, while in the below-the-mean category, the mean LSAT for whites is 32.9 compared to means ranging from 29.3 to 31 for the other groups. Regardless, the data show that the percentage of white first-time test takers passing the bar exceeds the percentage of students from each of the other ethnic groups in both the above- and below-the-mean LSAT groupings. White first-time test takers with LSAT scores below the class mean passed the bar at nearly the same rate as test takers of color with scores at or above the mean. This observation does not appear to be a simple consequence of overall higher LSAT scores among whites in both groups, nor that whites who scored below the mean and test takers of color who scored above the mean are both very close to the mean. Data to support this conclusion are explored more fully in a subsequent section of this report.[44] The point of these analyses was to examine whether the LSAT mean provided a meaningful cutoff to distinguish passing from failing examinees regardless of ethnicity. The data suggest that the answer is no.

Summarizing Eventual Pass Rates

The next series of analyses focused on eventual pass rates rather than first-time pass rates. Eventual pass rate is based on bar examination outcome data that were available at the time the data collection effort for this study was completed. Although some study participants who had not yet passed a bar examination may eventually do so, data on patterns of repeating[45] suggest that this number would be small and that the overall pass/fail patterns among ethnic groups described in this report are unlikely to change substantially. The purposes of analyzing eventual pass rate data were (1) to identify the proportion of participants who were able to enter the profession, and (2) to examine patterns of retesting and changes in pass rates over time. The study data show that the majority of applicants who failed the bar examination on their first attempt repeated the exam one or more times. Table 9 presents the number and percentage of bar examination attempts for study participants within each of three bar examination outcome categories.[46] The data in this table show that less than 3 percent (635 out of 23,103) of the examinees both failed the first bar examination and did not make at least one additional attempt. The data also show that 6 percent of the total group failed on the first attempt but eventually passed, while only 5 percent never passed. Among those who failed the first time but eventually passed, nearly three quarters passed on their second attempt.

TABLE 9

Number and percentage of study participants by number of attempts and eventual bar examination outcome

Bar Exam Outcome	Number of Attempts								
	1	2	3	4	5	6	7	8	Total*
First Pass									
Number	20,473	-	-	-	-	-	-	-	20,473
Percent**	100.00								88.62
Eventual Pass									
Number	0	1,054	303	51	16	2	2	0	1,428
Percent	0.00	73.81	21.22	3.57	1.12	0.14	0.14	0.00	6.18
Never Passed									
Number	635	274	200	79	9	4	0	1	1,202
Percent	52.83	22.80	16.64	6.57	0.75	0.33	0.00	0.08	5.20
Total									
Number	21,108	1,328	503	130	25	6	2	1	23,103
Percent	91.36	5.75	2.18	0.56	0.11	0.03	0.01	0.00	100.00

*Percent shows column percentages.

**Percent shows row percentages.

44. *See* "Explaining First-time Bar Examination Outcomes for Examinees of Color," *infra* page 48.

45. *See* Table 19, *infra* page 56, and accompanying text.

46. Table 9 shows summary data for all study participants combined. For data showing number of bar attempts separately by ethnic group, *see* Table 19, *infra* page 56.

More important than confirmation that the majority of first-time failing examinees make additional attempts at the bar are the changes in pass rates over time. Substantial improvements are observed for every ethnic group when bar examination outcome is viewed from the perspective of eventual pass rather than first-time pass.

TABLE 10

Number and percentage of study participants by ethnic group and eventual bar examination outcome

	Eventual Bar Examination Outcome		
Ethnic Group	Pass	Fail	Total
American Indian			
Number	88	19	107
Percent*	82.24	17.76	0.46
Asian American			
Number	883	78	961
Percent	91.88	8.12	4.16
Black			
Number	1,062	306	1368
Percent	77.63	22.37	5.93
Mexican American			
Number	352	46	398
Percent	88.44	11.56	1.72
Puerto Rican			
Number	102	26	128
Percent	79.69	20.31	0.55
Hispanic			
Number	463	57	520
Percent	89.04	10.96	2.25
White			
Number	18,644	641	19,285
Percent	96.68	3.32	83.54
Other			
Number	292	27	319
Percent	91.54	8.46	1.38
Total			
Number	21,886	1,200	23,086
Percent	94.80	5.20	100.00

*Percent shows the percentage within each ethnic group who passed and failed.

Table 10 shows eventual pass rate data by ethnic group for the 23,086 study participants for whom bar examination data were obtained and ethnicity was known.[47] This table is presented in a format parallel to Table 6 so that direct comparisons between first-time and eventual pass rates easily can be made. The percentage of examinees that eventually passed the bar increased over first-time rates for every ethnic group. The differential pass rates between white examinees and examinees from each of the other ethnic groups are smaller for eventual outcomes than for first-time bar results, but there still is a statistically significant relationship between ethnic group membership and pass/fail outcome.

As was true for first-time outcomes, the eventual pass rate for men slightly exceeded that for women (95.2 percent compared with 94.3 percent), but the difference was of no practical significance.[48]

47. Consistent with the analyses of first-time data by ethnic group, the 17 participants for whom ethnicity was not reported were excluded from this and subsequent analyses of eventual pass bar examination outcome data.

48. For the chi-square test of independence, chi-square = 9.08 with 1 *df* ($p = .003$), but $w = .02$.

TABLE 11

Number and percentage of study participants who eventually passed the bar examination, by ethnic group and law school cluster

	Law School Cluster					
Ethnic Group	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
American Indian						
Number	8	16	35	14	10	4
Percent	88.89	88.89	81.40	82.35	76.92	66.67
Asian American						
Number	153	262	187	247	24	10
Percent	97.45	91.93	92.57	90.81	82.76	62.50
Black						
Number	124	187	324	215	41	171
Percent	93.94	78.90	82.65	72.15	66.13	69.51
Mexican American						
Number	42	87	106	80	7	29
Percent	93.33	93.55	92.17	85.11	87.50	69.05
Puerto Rican						
Number	23	22	10	39	5	3
Percent	92.00	84.62	55.56	81.25	71.43	75.00
Hispanic						
Number	63	106	98	142	38	16
Percent	96.92	90.60	88.29	84.52	95.00	84.21
White						
Number	1,607	3,318	5,163	6,683	1,528	346
Percent	98.77	97.05	97.71	96.44	93.23	88.49
Other						
Number	38	74	55	103	13	8
Percent	100.00	93.67	91.67	88.79	100.00	66.67
Total						
Number	2,058	4,072	5,978	7,523	1,666	487
Percent	98.09	95.27	96.03	94.71	91.99	78.17

A comparison of eventual pass rates by law school cluster and ethnic group is shown in Table 11. This table has the same cluster ordering and table layout as Table 7, which presents parallel data for first-time test takers. Like the parallel data for first-time takers, these data show significant variation both among ethnic groups and among clusters. Even so, the overall increase in the number of applicants eventually passing the bar results in reduced discrepancies between whites and other ethnic groups, particularly in cluster 1 schools.

Eventual pass rates also were examined by dividing the test takers into two groups based on their LSAT scores. Those with LSAT scores at or above the mean for the fall 1991 entering class (36.5) constituted one group, those with scores below the mean the other group. Eventual bar-passage rates are presented in Table 12 for those with LSAT scores above and below the class mean. Among the study participants who entered law school with LSAT scores above the mean, 98.1 percent eventually passed the bar. Within ethnic group, pass rates range from 98.25 for white examinees to 94.7 for Puerto Rican examinees. Nearly the same proportion of white applicants with LSAT scores below the mean (94.4 percent) also eventually passed the bar, but the pass rate is not as high for members of other ethnic groups. This result is partly attributable to the discrepancy in mean LSAT scores between white applicants and applicants of color but, as was shown for first-time results, the LSAT score discrepancy does not explain all of the observed difference.

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TABLE 12

Number and percentage of study participants by LSAT score group, ethnic group, and eventual bar examination outcome

	At or Above LSAT Mean		Below LSAT Mean	
Ethnic Group	Pass	Fail	Pass	Fail
American Indian				
Number	33	1	55	18
Percent*	97.06	2.94	75.34	24.66
Asian American				
Number	459	14	424	64
Percent	97.04	2.96	86.89	13.11
Black				
Number	162	7	900	299
Percent	95.86	4.14	75.06	24.94
Mexican American				
Number	105	4	247	42
Percent	96.33	3.67	85.47	14.53
Puerto Rican				
Number	36	2	66	24
Percent	94.74	5.26	73.33	26.67
Hispanic				
Number	171	7	292	50
Percent	96.07	3.93	85.38	14.62
White				
Number	11,189	199	7,455	442
Percent	98.25	1.75	94.40	5.60
Other				
Number	146	4	146	23
Percent	97.33	2.67	86.39	13.61
Total				
Number	12,301	238	9,585	962
Percent	98.10	1.90	90.88	9.12

*Percent shows the row percentage with each LSAT group.

From the perspective of entry to the profession, the eventual pass rate is a far more important outcome than first-time pass rate. For applicants of color, eventual pass rate translates to a substantially higher rate of success than does initial pass rate. The difference between first-time pass rates and eventual pass rates for examinees of color, especially black examinees, however, raises several important issues that need to be addressed. Data comparing background characteristics and educational experiences of students who pass the first time with those who require more than one attempt are provided in Chapter Three.

Chapter Two: Building Statistical Models to Identify Factors Related to Bar Passage

The next step was to build statistical models that might help in exploring factors related to passing the bar. The goal for these models was not only to try to explain some of the discrepancy among ethnic groups, but to begin to explain more generally the observed differences between those who passed and those who failed. Because the outcome to be predicted is dichotomous (i.e., pass or fail), logistic regression models were used to build the models.[49] All of the logistic regression models were based on first-time bar examination outcome data.

Both previous research and theory developed from empirical data about law school applicants and students were used to identify reasonable variables to include in the statistical models.[50] Eight factors were examined in this study: law school academic performance, undergraduate academic performance, LSAT score, socioeconomic status (SES), characteristics of the degree-granting undergraduate school and of the degree-granting law school, and sex and ethnicity of bar examinees. Each factor is explained more fully in the discussion that follows.

Both adjusted final cumulative law school grades, as described previously, and unadjusted final cumulative law school grades standardized within law school (but not adjusted for possible differences in grading standards among schools) were considered as indicators of law school academic performance. The results, in terms of significance as an explanatory variable, were consistent, regardless of which form of LGPA was used. That is, law school grades were significantly correlated with bar examination outcome and they accounted for more of the variance than any other variable examined.

The SES index developed by Wightman[52] was used as the SES factor for these analyses. The index was developed as follows. As part of the LSAC Bar Passage Study data collection, five standard indicators of SES were captured on the *Entering Student Questionnaire*. More specifically, students were asked to describe approximate level of family income at the time the respondent was in high school, as well as, to the extent that they were applicable, mother's occupation, father's occupation, mother's education, and father's education. In order to make simultaneous use of these five pieces of information, a cluster

49. *See* "Logistic Regression Models," *supra* page 9.

50. *See, for example*, the sources cited in note 11, *supra*; Wightman, *supra* note 18 (for empirical data about legal education leading to the selection of factors to be examined); and Vaughns, *supra* note 3 (identifying poor academic preparation and lack of familiarity with the law school culture for students of color as factors contributing to low bar pass rates).

51. *See* "Working With Law School Grades Across Different Law Schools," *supra* page 7, for an explanation of this study's adjustment of cumulative law school grades.

52. Wightman, *supra* note 18, at 7.

analysis of the SES data was performed.[53] The goal of this cluster analysis was to determine whether an SES index that would classify each responding student into a definable, homogeneous SES category could be developed.

The four resulting clusters are of approximately equal size. Each student was classified into one of the following four SES groups.

Upper. Both mothers and fathers of students in this group had graduate or professional training and held professional jobs. The level of education and the level of occupation are virtually identical for both the fathers and the mothers of these students.

Upper-Middle. Fathers in this group tend to be professional workers, but mothers white-collar workers or homemakers. Fathers of these students also are likely to hold graduate or professional degrees, while mothers tend to have associate or bachelor's degrees, but no graduate or professional training.

Middle. Fathers of students in this group tend to hold white-collar nonprofessional jobs, while mothers tend to hold a mix of blue-collar and white-collar nonprofessional jobs. Additionally, many fathers of students in this group have some college experience, with many holding an associate's degree. Mothers tend to have less education than fathers, but at least a high school diploma. Students in this and each of the higher SES groups reported average to above average family income when they were in high school.

Lower-Middle. Both mothers and fathers of students in this group tend to be blue-collar workers and are not college educated. Many have less than a high school education. Additionally, students in this group described their family income when they were in high school as below average.

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53. Because the sample size was so large (n = 28,889) and because a goal of the analysis was to form clusters or groups of students that are highly homogeneous, a nonhierarchical clustering algorithm was employed. An essential feature of the nonhierarchical clustering algorithm is that an observation can be reassigned to a different cluster if the distance to the centroid of that cluster is less than the distance to the centroid of the parent cluster. The specific method used was the FASTCLUS procedure available in the SAS programming language. This procedure is derived from Hartigan's *leader* algorithm (1975) and MacQueen's *k-means* algorithm (1967). The clustering is done on the basis of Euclidean distances computed for this study from the vector of the five SES indicator variables. The *k-means* method merges clusters in a way that will minimize the increase in the total within-groups sum of squares. *See* J.A. Hartigan, Clustering Algorithms. New York: John Wiley & Sons (1975), and J.B. MacQueen, "Some Methods for Classification and Analysis of Multivariate Observations," in Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability. Berkeley: University of California Press (1967).

Two external stopping rules, the pseudo-F statistic and the cubic clustering criterion, were applied to estimate the optimal number of clusters. In general, the pseudo-F statistic measures the separation among all the clusters at the current level. The cubic clustering criterion is described by Milligan and Cooper (1985) as an index that is the product of two factors: the natural logarithm of $(1\text{-}E(R^2)/(1\text{-}R^2)$ and $((np/2)^{.5})/((.001+E(R^2))^{1.2})$, where R^2 is the proportion of variance accounted for by the clusters and p is an estimate of the dimensionality of the between-cluster variation. The expected value of R^2 is determined under the assumption that the data have been sampled from a uniform distribution based on a hyperbox. *See* G.W. Milligan and N.C. Cooper, *An Examination of Procedures for Determining the Number of Clusters in a Data Set*, 50 Psychometrika 159 (1985).

The two stopping rules were calculated for solutions of 15 through two clusters. Both the pseudo-F statistic and the cubic clustering criterion suggest that four is the optimal number of clusters for these data.

The four-cluster solution was used to assign students in this study to an SES group. Only three students could not be classified because they did not respond to the five SES indicator questions on the *Entering Student Questionnaire*.

The scales for the other variables used in the models were as follows. LSAT scores for students participating in this study were on the 10-48 LSAT score scale that was in use from June 1982 through February 1991. Two methods of grouping law schools used by Wightman in previous research, law school strata and law school clusters,[54] were employed for this study to provide some evaluation of the relationship between law school characteristics and bar examination outcome. In order to include information about the undergraduate schools that these study participants attended, an index of undergraduate school selectivity was used. Selectivity was classified as very high, high, medium, and low using the selectivity categorization assigned by Astin, Dey, Korn, and Riggs.[55] This selectivity index was developed by Astin to define strata for four-year colleges and universities. It uses an estimate of the mean score of entering freshmen on the Verbal plus Quantitative portions of the Scholastic Aptitude Test (SAT) or the converted SAT Quantitative and Verbal equivalents from the American College Test (ACT) composite.

Because sex and ethnicity are categorical variables, they were coded using the nonordered coding scheme known as dummy coding.[56] Law school cluster also was treated as a categorical variable and dummy coded.

As an initial analytic step in building the statistical models, the correlation between each variable and first-time p ss or fail status was examined. These correlations are presented in Table 13. All of the correlations were statistically significant, but as discussed previously, this is partly a consequence of the large sample size. In some cases, the actual values of the correlations were close to zero with little or no practical consequence.

TABLE 13

Correlation of selected factors with bar examination pass/fail outcome

Factor	Correlation
Cumulative 3-year law school average (adjusted)	.41*
Cumulative 3-year law school average (standardized within school)	.38*
LSAT score	.30*
Undergraduate grade-point average	.18*
Astin index of undergraduate school selectivity	.08*
Socioeconomic status	.06*
Stratum of attended law school	-.09*
Sex (1 = male; 2 = female)	.03*
Asian American (1 = Asian American; 0 otherwise)	.05*
Black (1 = black; 0 otherwise)	-.21*
Hispanic (1 = Hispanic; 0 otherwise)	-.10*

*$p < .0001$

54. *See* Wightman, *supra* note 18, at 5-6, and "Grouping Law Schools," *supra* page 8 (explaining law school strata and law school clusters).

55. A.W. Astin, E.L. Dey, W.S. Korn and E.R. Riggs, The American Freshman: National Norms for Fall 1991. Los Angeles: The Higher Education Research Institute Graduate School of Education, UCLA (1991).

56. *See* "Coding Methods for Categorical Variables," *supra* page 11 (explaining dummy coding).

The highest correlations are between (1) law school grades and pass/fail and (2) LSAT score and pass/fail. The correlation between law school grades and pass/fail was calculated using both adjusted and unadjusted LGPAs. Adjusted LGPA consistently proved to be more highly correlated with the bar examination outcome than did unadjusted LGPA. Better fit to the logistic regression models also was found when adjusted LGPA was used as a predictor. For subsequent analyses, adjusted LGPA is used as the variable to represent law school academic performance.[57]

The lowest correlation is between gender and pass/fail.[58] This result is consistent with the chi-square test of independence reported earlier. As noted previously, sex also is not related to bar examination outcome within any ethnic group.[59] For these reasons, sex is not included as an explanatory factor in any of the subsequent models.

For these correlation analyses, the three Spanish language groups—Mexican American, Puerto Rican, and other Hispanic—were analyzed as a single group. In subsequent analyses, those groups are treated separately. The data show a very small correlation of no practical importance between pass/fail outcome and Asian American group membership. The correlations are considerably higher for black and for Hispanic group members. The data in Table 13 show the correlation of each of the variables only with bar examination outcome. Because the interest here is in determining whether the factors identified as candidates for explaining observed patterns of first-time bar outcomes are reasonable, the intercorrelations among those variables are not included in Table 13.[60] To the extent that these variables are correlated with one another, their unique contribution to the explanation of bar examination outcomes is diminished. Thus, as is shown in a later section of this report, despite their individual statistically significant correlations with bar outcomes, a few of these variables fail to add statistically and practically significant additional information to a bar-outcome prediction model that already includes LGPA and LSAT.[61] This outcome is partly a consequence of their correlation with one or both of those two measures.

Testing Logistic Regression Models to Explain Bar Examination Outcomes

A model that tested the joint relationship between the pass/fail criterion and the two predictors that showed the highest correlations with it—adjusted law school cumulative grade-point average and LSAT score—was the first to be evaluated. This model was estimated initially for all jurisdictions combined, then separately for each jurisdiction for which sufficient data were available. When evaluated together, both predictors were statistically significant regardless of whether the data were combined across jurisdictions or estimated separately for each jurisdiction. The results from these analyses showed that a slightly better model fit was obtained when the models were estimated separately for each jurisdiction. However, the small sample size for critical variables such as ethnicity and law school cluster resulted in an inability to test their explanatory value for many individual jurisdictions. When samples were sufficiently large, models were tested multiple times—once using combined data, and then using data for each jurisdiction individually. If differences between the combined data and the individual jurisdictions' data were found, those differences were reported. Otherwise, only results from the combined data analyses were reported. This procedure was followed because the goal of the analyses was to describe relationships for the national data, not to evaluate the bar examination procedures or outcomes of individual jurisdictions.

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57. *See* "Working With Law School Grades Across Different Law Schools," *supra* page 7.

58. For the correlation analysis, female is coded 1 and male is coded 2, and pass is coded 1 and fail is coded 0. Thus, the small positive correlation suggests a slight tendency for an outcome of pass to be associated with being male.

59. *See* "Gender Group Comparisons," *supra* page 26 (discussing statistical relationship between sex and first-time pass/fail outcomes).

60. *See, infra,* note 70 for correlations among selected explanatory variables.

61. *See* "Evaluating the Impact of Adding Selected Ordered Variables to the Model," *infra* page 39 (presenting results from adding additional variables to an explanatory model that already includes LGPA and LSAT score).

Twelve jurisdictions with small sample sizes or very small numbers of applicants of color were not included in these statistical models.[62] Examinees from schools that did not give grades from which a final cumulative grade-point average could be calculated, by necessity, also were not included. Additionally, schools for which the student participation rate was less than 20 percent were excluded.[63] Among the 39 jurisdictions with sufficient data to be included, complete data for 20,692 examinees (90 percent of the study participants for whom bar data were matched) were available and included in the analyses of the regression models.

Using data from all jurisdictions combined, the logistic regression analyses showed that both adjusted LGPA and LSAT score were statistically significant factors in explaining bar examination outcomes.[64] Another way to evaluate the utility of this model for explaining bar examination outcomes was to examine the correlation between predicted and actual outcomes. For these data, the correlation between predicted and actual pass or fail was .52. (By comparison, the mean correlation between LSAT score and first-year law school average [FYA] was .41 for law schools participating in the 1990-92 LSAC correlation studies. The multiple correlation of LSAT score and UGPA with FYA was .49 for those same schools.)[65]

Testing of this two-factor explanatory model was carried out for each of 39 jurisdictions individually. That is, a separate logistic regression model was built for each jurisdiction for which sufficient data were available. These separate models were built in order to allow for the possibility that the meaning of pass or fail differed among jurisdictions in a way that resulted in different relationships between the criterion and the explanatory variables. These analyses produced 39 separate sets of model diagnostics, one for each jurisdiction.[66] In order to summarize data across the 39 jurisdictions included in these analyses, as well as to provide an additional statistic for evaluating the model, the correlation between actual outcomes and those predicted by the model was calculated for each jurisdiction. For the LGPA/LSAT score model, the correlation was .58. This relationship is slightly higher than the .52 correlation obtained when data were pooled across jurisdictions, but the conclusion that these two factors make a significant contribution to explaining bar examination outcomes remains unchanged. For the model using only two factors—law school performance and LSAT score—the percentages of concordant pairs obtained for the 39 separate analyses ranged from 82 to 97, with a median value of 89. These findings are consistent with the result for all jurisdictions combined, in which 87 percent of pairs were concordant. The size of the correlation between predicted and actual outcome demonstrates that, although both law school grades and LSAT score are significantly related to bar examination outcome, a considerable amount of unexplained variance remains even after these two factors are taken into account. The magnitude of the test statistic to evaluate the fit of the data to the model confirmed this conclusion, as did the association of predicted probabilities and observed responses.

Evaluating the Impact of Adding Selected Ordered Variables to the Model

In an attempt to improve the explanatory power of the model, additional analyses were conducted to determine which, if any, of the other ordered variables[67] improved the prediction of bar examination outcomes after law school grades and LSAT score were already in the model. Each of the following variables was added, one at a time, to the law school grades/LSAT model: UGPA, Astin index of undergraduate school

62. *See* "Jurisdictions," *supra* page 5, for a description of the jurisdictions included in the analyses.

63. *See* "Schools," *supra* page 5, for a description of the schools included in these analyses.

64. The likelihood ratio chi-square statistic for the model that included the two explanatory variables was significant ($p = .0001$) as was the Wald statistic for each of them ($p = .0001$). The percentage of concordant and discordant pairs suggested moderately good fit for this model. Specifically, 87 percent of the 42,819,923 possible pass/fail pairs were concordant, 12.7 percent were discordant, and .3 percent were tied.

65. *See* Linda F. Wightman, Predictive Validity of the LSAT: A National Summary of the 1990-92 Correlation Studies. Law School Admission Council Research Report No. 93-05, Newtown, PA (1993), page 8.

66. The likelihood ratio chi-square statistics for the covariates for each jurisdiction's model was statistically significant ($p = .0001$), as were the parameter estimates for both LGPA and LSAT.

67. *See, supra,* pages 35-37 for a discussion of factors hypothesized to have a relationship with bar examination outcome.

selectivity, and law school stratum (i.e., law schools grouped into three strata based on median LSAT score of the entering class).[68] Following the addition of each variable, a statistical indicator of model improvement was examined. "Improvement" is the difference between how well the data fit a model that included the new variable and how well they fit the model that included only LGPA and LSAT score.[69] Model improvements resulting from adding each of the variables to the LGPA and LSAT score are shown in Table 14. As discussed previously, each of the factors examined was related individually to bar examination outcome. Further analyses of these variables revealed that they also were significantly correlated with law school grades and/or LSAT score.[70] For that reason, once those two variables were in the model, there was little unique information for the additional variables to contribute. The chi-square improvement values for two of the models, the one to which the Astin index of undergraduate school selectivity was added and the one to which UGPA was added, were statistically significant. In each, however, the chi-square improvement value was modest. As importantly, despite the statistically significant improvement from adding UGPA or the Astin index of undergraduate school selectivity, neither the percentage of concordant pairs nor the correlation between actual and predicted outcome showed any change in values calculated to four decimal places.

TABLE 14

Chi-square improvement resulting from adding selected continuous variables to a bar examination outcome model in which LGPA and LSAT were already entered

Explanatory Variables	DF	Chi-Square Improvement
LGPA, LSAT, Astin Index	1	4.29*
LGPA, LSAT, Stratum	1	0.235
LGPA, LSAT, UGPA	1	13.33**

* $p < .01$ ** $p < .005$

As noted previously, all analyses of model fit were conducted not only for all jurisdictions combined but also within individual jurisdictions when sample sizes were sufficient. Adding UGPA to models for individual jurisdictions produced mixed results. That is, the improvement was statistically significant for only about half of the jurisdictions. Like the results from using combined data, adding UGPA to the model for individual jurisdictions in no case resulted in a meaningful increase in the correlation between actual and predicted outcome or in the percentage of concordant pairs. The Astin index of selectivity was significant in less than one third of the analyses for individual jurisdictions, with the same lack of increase in the correlation between actual and predicted outcome or in the percentage of concordant pairs.

68. *See* Wightman, *supra* note 18, for a description of law school stratum.

69. More precisely, improvement is the difference between the log likelihood chi-square values with and without the additional variable in the model. This difference is also distributed as a chi-square and is used to test the null hypothesis that the additional variable did not improve the explanatory power of the model.

70. LSAT score was correlated 0.47 with law school stratum, 0.19 with SES, 0.27 with the Astin Index, and 0.25 with UGPA. Adjusted LGPA was correlated 0.34 with UGPA.

Evaluating the Impact of Adding SES to the Model

SES was entered into the model as an ordered variable using the SES index values described previously.[71] There was no improvement in the fit of the data to the model as a consequence of adding SES.[72] This result is not surprising given that the simple correlation between SES and bar examination outcome was only .06. Additionally, there is a small correlation between SES and LSAT score (.19). Adding SES to a model that already included LSAT score and LGPA did not add any unique information to the model.

This finding does not necessarily mean that SES plays no role in determining who among the general population ultimately becomes a lawyer. The small correlation between SES and bar examination outcome for law school graduates may be the result of the educational selection process. Legal education and the bar examination occur at the very end of a long educational road. As early as 1961, researchers found that the choice of law as a career was not random among undergraduates—students from upper SES families were more likely to choose law than students from lower SES groups.[73] This pattern still exists within this 1991 study population.[74] Thus, whatever role SES might play in educational achievement may have already taken its toll.

Evaluating the Impact of Adding Some Nonordered Variables to the Model

In the next set of analyses, two nonordered (i.e., categorical) variables were tested in the LGPA/LSAT score model: law school cluster and geographic region in which the examination was taken. As explained earlier, when categorical variables are used in these logistic regression models, the only interpretation that is made about any category is a comparison with another, reference category.[75]

Adding Law School Cluster to the Model. Law school cluster was the first categorical variable to be examined.[76] For these analyses, the regression parameter for each cluster was interpreted as a comparison with cluster 3, the reference category. Cluster 3 was selected as the referent for two reasons. First, it is one of the two largest clusters, representing 50 of the 155 schools included in this study. Second, cluster 3 schools represent excellent educational value for students across a broad range of economic means. The schools included in cluster 3 are predominantly public (96 percent) and among the least expensive of the ABA-approved schools. They are above average in selectivity and in the UGPAs and LSAT scores of their entering students. Using cluster 3 as the reference cluster means that the regression coefficient obtained for each of the other clusters is interpreted as the change in log odds of passing the bar examination on the first attempt associated with attendance at a school in that cluster *compared to* having attended a cluster 3 school. If a cluster other than 3 were selected to be the reference group, the model fit would not be affected. The only purpose of the referent is to identify a group against which the odds for the other groups can be compared.

71. *See, supra,* pages 35-36 for a detailed description of the SES Index.

72. Chi-square improvement = 0.518 with 1 *df*.

73. Warkov and Zelan, *supra* note 18.

74. Wightman, *supra* note 18, at 15.

75. *See* "Coding Methods for Categorical Variables," *supra* page 11.

76. *Id.* The assignments to clusters were dummy coded for these analyses. A series of variables called "cluster 1," "cluster 2," etc. was created to represent the factor "law school cluster." The number of new variables required to represent a categorical variable is one less than the number of categories. For the law school clusters, five new variables are created to represent the six clusters. Membership in a cluster is assigned 1, while nonmembership is assigned 0. For example, a student who attended a cluster 1 law school is assigned a 1 for cluster 1 and a 0 for clusters 2 through 6.

The purpose of adding cluster to the model was to determine whether the characteristics of the school a student attended was related to the probability that a student passed the bar examination after LGPA and LSAT score had been taken into account. Data reported earlier show that overall bar passage rates as well as pass rates by ethnic group varied among law school clusters.[77] Data also show that students attending school in different clusters differed on academic indicators and that law school clusters differed on selectivity.[78] One question of interest was whether students in this sample with the same LGPA and LSAT score had a better chance of passing the bar examination when they attended the most highly selective or the most academically competitive law schools than when they attended other schools. The model test statistic showed that the model with all the variables was statistically significant.[79] The test for model improvement also was statistically significant. That is, adding law school cluster resulted in statistically significant improvement to the model. The improvement, as measured by changes in the fit statistic, not only was statistically significant, but was larger than the observed change from adding to the model any of the ordered variables examined in the previous section.[80] However, the implications of adding this variable from the perspective of improving prediction were very modest. The percentage of concordant pairs increased only .02 percentage points—from 87.0 to 87.2 percent—and the amount of unexplained variance was only minimally reduced. Interpretation of the parameter estimates must be done from that perspective. Even so, the data from this model provided some information about the relationship between differences among law schools and outcomes on bar examinations. A detailed explanation of how to use that information is found in Appendix E.

TABLE 15

Selected summary statistics from a logistic regression model of bar examination outcome on LGPA, LSAT score, and law school cluster

Variable	DF	ML Parameter Estimate	Wald Chi-Square	Pr> Chi-Square	Odds Ratio
INTERCEPT	1	0.32	2.35	0.1254	
SCORE	1	0.08	205.99	0.0001	1.08
GRADES	1	1.58	1768.57	0.0001	4.87
CLUSTER 1	1	-0.22	2.61	0.1060	0.80
CLUSTER 2	1	-0.41	24.34	0.0001	0.66
CLUSTER 4	1	-0.05	0.48	0.4878	0.95
CLUSTER 5	1	-0.45	23.63	0.0001	0.64
CLUSTER 6	1	-0.81	31.79	0.0001	0.44

77. *See* "Law School Cluster Comparisons," *supra* page 28.

78. *See, supra,* note 20 (showing the average values of LSAT score and UGPA by cluster).

79. The following table presents selected results from adding law school cluster to LGPA and LSAT score in the explanatory model.

Criterion	Intercept Only	Intercept and Covariates	Chi-Square for Covariates
-2 LOG L	13958.33	9720.27	4238.06 with 7 *df* ($p = 0.0001$)
Improvement on LGPA/LSAT model		$N = 19,885$	70.14 with 5 *df* ($p < 0.001$)

80. Chi-square improvement = 70.14 with 5 *df* ($p < .001$).

Selected statistics from the logistic regression model that included law school cluster are shown in Table 15. The column labeled *Parameter Estimate* shows the multiplier that is applied to each variable in the model to calculate the probability of passing the bar examination for any individual student. The data in Table 15 show that the parameter estimates for cluster 1 and cluster 4 are not statistically significant, but that estimates for clusters 2, 5, and 6 are. This means that given the same LGPA and LSAT score, the probability of first-time bar passage was not significantly different for examinees from cluster 1 or cluster 4 schools than it was for examinees from cluster 3 schools. In contrast, being from any of the other clusters resulted in a significantly lower estimate of the probability of passing relative to being from a cluster 3 school (indicated by the negative parameter estimates). The odds column in Table 15 shows the amount of the reduction in odds relative to cluster 3 associated with each of the other clusters. For example, the table shows that for an examinee with the same LGPA and LSAT score, being in cluster 5 reduced the odds of passing the bar to less than two thirds (.64) when compared to being in cluster 3.

The model that includes law school cluster demonstrates that the change in the probability of passing associated with a change in cluster is greater for a person with lower measures than for someone with higher grades and LSAT scores. For the higher scoring person, the probability decreased from .99 to .98 as a consequence of a change from cluster 3 to cluster 6, while for the lower scoring person, the probability changed from .82 to .67.[81] These data suggest that, from the perspective of probability of passing the bar examination, the impact of cluster may be more important for lower scoring students than for higher scoring ones.

Examining Law School Cluster Data Graphically. To better understand the implications of the logistic regression models, some summary statistics on the variables identified as significantly related to bar examination outcome were examined graphically. Graphical display of the data illustrates the relationships identified by the logistic regression models. For example, the participants from different law school clusters were matched on adjusted law school grades. (For this and all subsequent analyses in which examinees were matched on LGPA, either adjusted or unadjusted, LGPA was rounded to the nearest .5.) Using the matched data, the proportion who passed the first bar examination was plotted separately for each law school cluster.

81. *See* Appendix E for a detailed numerical illustration of this phenomenon.

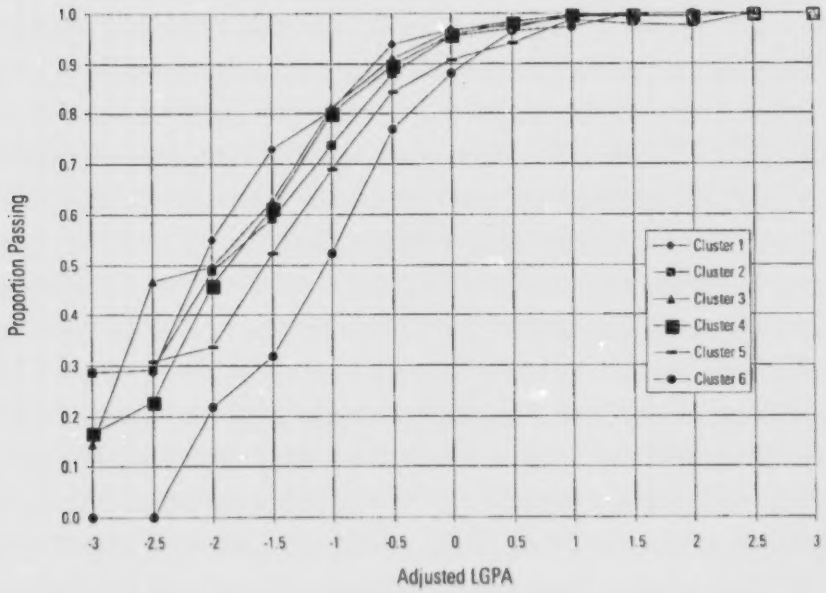

FIGURE 6. *Proportion of examinees passing their first bar exam matched on adjusted LGPA, separately by law school cluster*

The plot for each cluster is shown in Figure 6. Consistent with the analytical results from the logistic regression models, Figure 6 shows a strong relationship between adjusted LGPA and passing the bar exam. That is, as the adjusted LGPA increases, so does the proportion that passed. The figure also shows little difference among clusters 1, 3, and 4, with regard to proportion passing throughout the adjusted LGPA range. Again consistent with the statistical model, the largest discrepancies from cluster 3 are observed for cluster 5 and cluster 6.

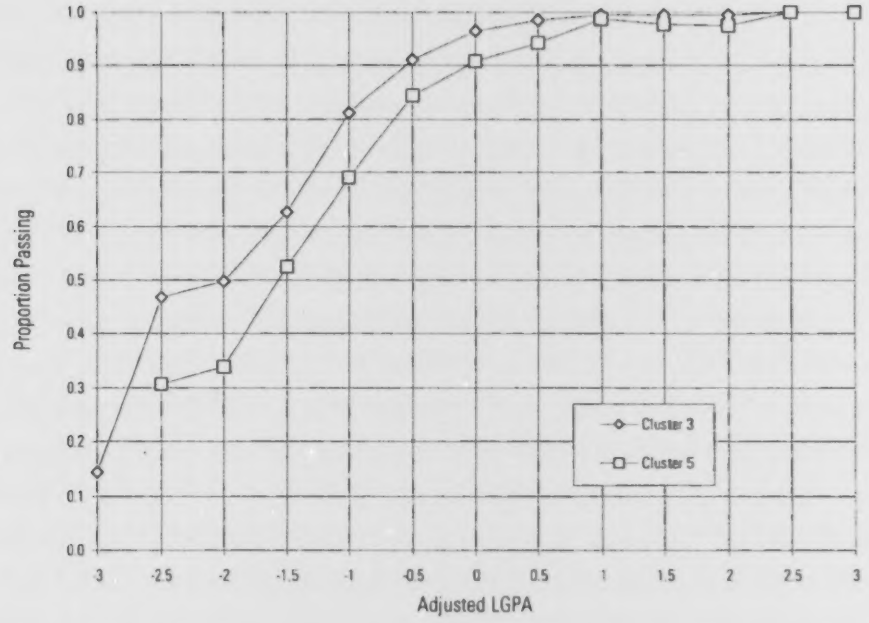

FIGURE 7a. *Proportion of examinees passing their first bar exam, matched on adjusted LGPA, separately for cluster 3 and cluster 5 schools*

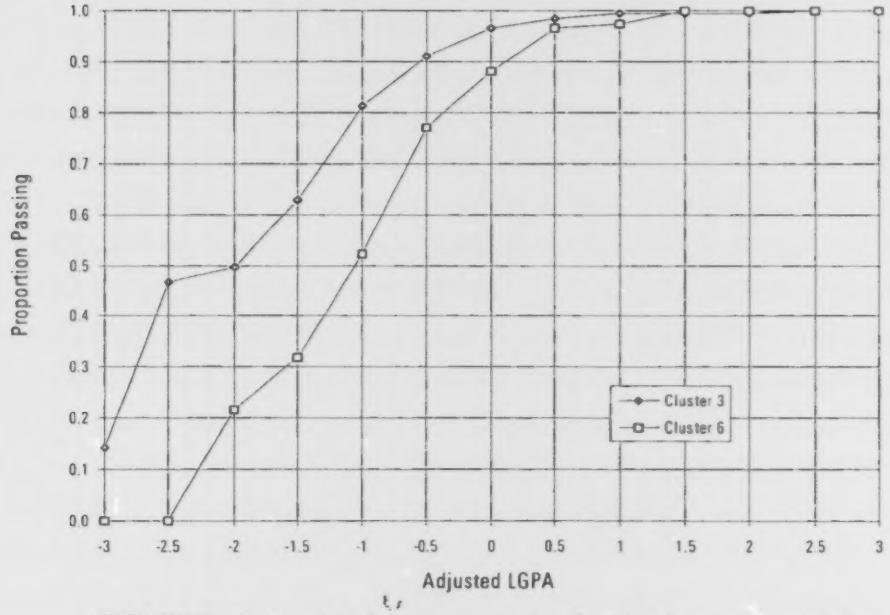

FIGURE 7b. *Proportion of examinees passing their first bar exam, matched on adjusted LGPA, separately for cluster 3 and cluster 6 schools*

Plots for clusters 3 and 5 and for clusters 3 and 6 are shown separately in Figures 7a and 7b, respectively, to more clearly illustrate the observed pattern. These figures show that the same general relationship between LGPA and bar examination outcome is observed for both sets of examinees. They also show that the proportion passing at a given LGPA remain higher for graduates from cluster 3 schools than for those from cluster 5 or cluster 6 schools until grades reached approximately one standard deviation above the mean. For grades that high or higher, there is no longer evidence of differences among clusters. The data also suggest that the difference in proportion passing remains fairly constant between cluster 3 and cluster 5 through the 0 to –2 LGPA range. In contrast, the difference between cluster 3 and cluster 6, in the same 0 to –2 LGPA range, becomes larger as LGPAs decrease. When these plots were produced with unadjusted grades (not shown), the differences between the clusters were slightly larger, but the trends were the same.

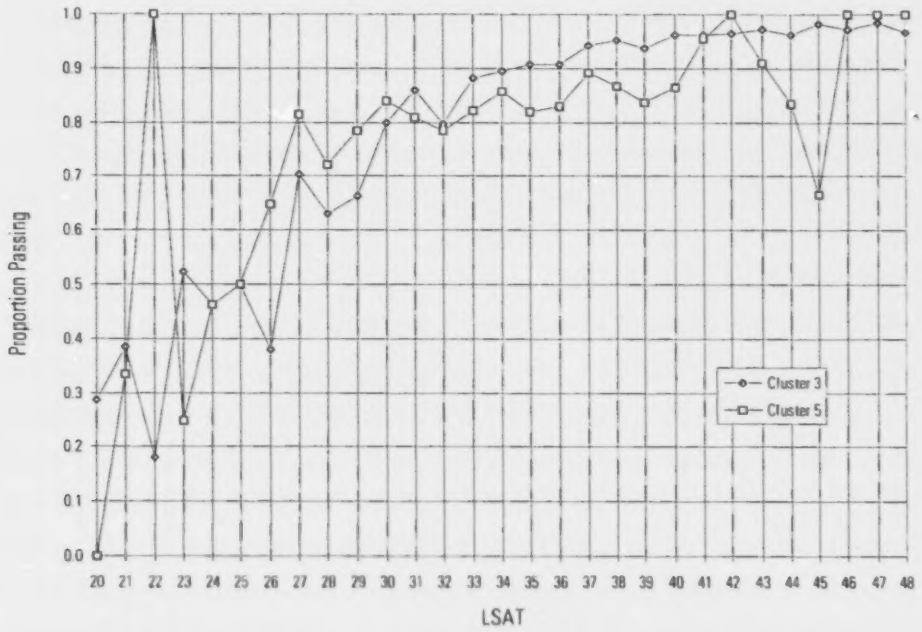

FIGURE 8a. *Proportion of examinees passing their first bar exam, matched on LSAT score, separately for cluster 3 and cluster 5 schools*

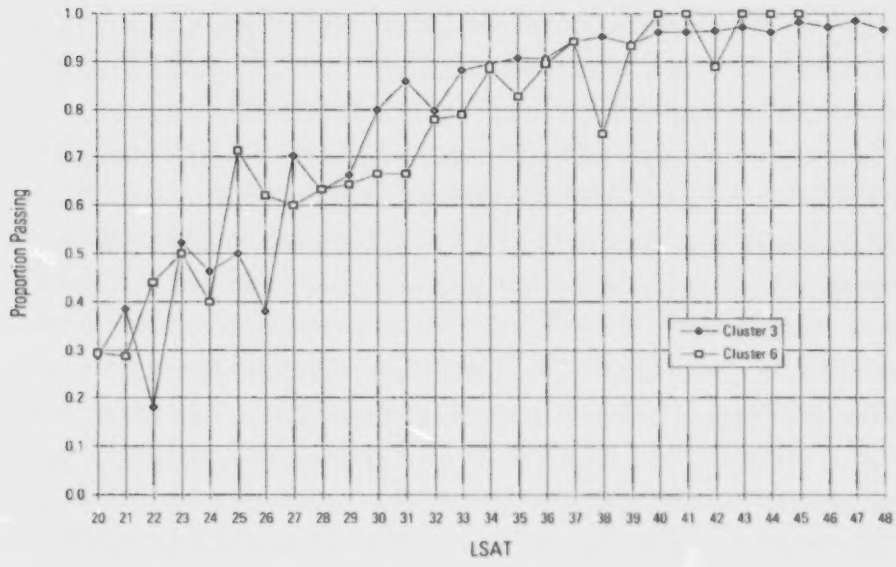

FIGURE 8b. *Proportion of examinees passing their first bar exam, matched on LSAT score, separately for cluster 3 and cluster 6 schools*

The differences in proportion passing among clusters when graduates were matched on LGPA were not observed when LSAT score was used as the matching variable. Figures 8a and 8b illustrate the proportion passing for clusters 3 and 5 and for clusters 3 and 6, respectively, for examinees matched on LSAT score. One explanation for this difference might be that, although the LGPAs were adjusted to reflect estimated differences among law schools, those grade adjustments were not sufficient. Another explanation may be the generally weaker relationship between LSAT score and bar outcome compared to the relationship between LGPA and bar passage.

Adding Geographic Region to the Model. The other categorical variable that was tested in the logistic regression model was geographic region in which the examination was taken and, consequently, in which application for bar admission was made. As discussed earlier, data that examine pass rates by region demonstrate substantial differences among those regions. A question of interest was whether the observed variations were simply the consequence of differences among bar applicants on the variables shown to be most related to bar outcome, or whether differences still existed after LGPA and LSAT were taken into account. For these analyses, the Northeast region was used as the reference category because the largest number of participants from this study took a first bar exam in that region and because it has broad representation from all of the ethnic groups examined in this study. The first-time pass rate for the Northeast (89.1 percent) was closest among all regions to the overall pass rate of the study participants (88.6 percent).

The analysis showed that the test statistic for the model with all of the explanatory variables was statistically significant, as was the improvement resulting from adding region to adjusted LGPA and LSAT score. The analysis also showed that the odds of passing, given the same LGPA and LSAT score, were not significantly different ($\alpha = .05$) from the Northeast for three geographic regions—South Central, Mountain West, and New England.[82] The odds of passing were about two times greater in the Great Lakes, the Midwest, and the Southeast than they were in the Northeast, given the same values on the other variables in the model. In contrast, they were the lowest in the Northwest and the Far West. As noted previously, the number of examinees who tested in the Northwest region is relatively small and the data may be less stable than the data for other, larger regions. The difference in odds between the Northeast and the Far West is particularly relevant because of the large proportion of participants of color who sat for the bar in those regions. The data show that for an examinee with the same LGPA and LSAT score, the odds of passing the bar examination in the Far West were less than half (0.40) when compared to the Northeast. The effect of adding ethnicity to this model, as well as an examination of the interaction between ethnicity and region, is considered in a later section of this report.[83]

Explaining First-time Bar Examination Outcomes for Examinees of Color

One goal of this study was to identify factors that could help explain differences in bar passage outcomes. A component to achieving that goal was to determine whether relationships between relevant factors and bar examination outcomes were the same for law school graduates of color as they were for white graduates. The data presented thus far confirm substantial differential first-time pass rates among members of different ethnic groups. The data also demonstrate that LGPA and LSAT score explain more of the variation in bar passage outcomes than do any of the other variables examined. An important objective of this section is to determine whether the factors that are related to bar examination outcomes for the total group, in which the number of white examinees is dominant, bear the same relationships for bar examinees of color. This section also reports analyses aimed at suggesting explanations for the observed differences in bar pass rates among the groups as well as remedies that might alleviate some of the disparity.

82. The statistical results from adding geographic region as a categorical variable to the model that already included LGPA and LSAT score are as follows:

Variable	DF	ML Parameter Estimate	Pr> Chi-Square	Odds Ratio
INTERCEPT	1	-0.400	0.0395	.
SCORE	1	0.094	0.0001	1.099
GRADES	1	1.603	0.0001	4.967
Far West	1	-0.597	0.0001	0.551
Great Lakes	1	0.697	0.0001	2.007
Midsouth	1	-0.490	0.0001	0.613
Midwest	1	0.708	0.0001	2.031
Mountain West	1	-0.233	0.0681	0.792
New England	1	-0.259	0.0761	0.772
Northwest	1	-0.907	0.0006	0.404
South Central	1	-0.059	0.5470	0.942
Southeast	1	0.637	0.0001	1.891

The interpretation of the odds ratio and the calculation of probability are the same as illustrated for law school cluster in the previous section. *See* Appendix E for a detailed explanation of how to interpret these results.

83. *See* "Adding Ethnicity to the Geographic Region and Law School Cluster Logistic Regression Models," *infra* page 52 (showing the chi-square improvement from adding ethnicity to a model that included LGPA, LSAT score, and geographic region and also showing that interaction terms were not significant).

First, data comparing performance separately by ethnic group on the two major variables that were most related to bar examination outcomes were evaluated. Next, logistic regression models, first using only these two predictors, then using LGPA, LSAT score, and either geographic region or law school cluster, were expanded by adding ethnicity as a categorical variable. Finally, interactions between ethnicity and the other independent variables were examined. The results from these analyses show that adding ethnicity significantly improved the fit of the bar examination outcome model even after other significantly correlated variables were taken into account. The data also show that adding ethnicity to the model did not change the correlation between predicted and actual outcome. These results suggest that the LSAT/UGPA prediction systems are parallel across ethnic groups.

Examining Summary Statistics on the Predictor and Criterion Variables Separately by Ethnic Group. Earlier studies, with more limited data availability, found that LGPA and LSAT score were highly related to bar examination outcome.[84] The analyses presented in previous sections of this report provide support for those findings from the national data. Some interpretations of the earlier studies coupled two important findings—(1) the significant relationship between LSAT score and LGPA as independent variables and bar examination outcome as the criterion and (2) the lower test scores and law school grades typically earned by law students of color—to provide the explanation for the observed discrepancy in bar passage rates. Consistent with other studies, data from the current study also demonstrate substantial differences between white study participants and many participants of color on these two measures.

84. *See, for example,* Klein, *supra* note 7, and Bernstine, *supra* note 3.

TABLE 16

Mean and standard deviation of LSAT, UGPA, and Standardized LGPA (adjusted and not adjusted) by ethnic group

		Measure			
Ethnic Group	Statistic	LSAT Score	UGPA	Standardized LGPA	Adjusted LGPA
American Indian					
	Mean	32.97	2.97	-0.71	-0.69
	Standard Deviation	5.80	0.48	0.88	0.89
	Number	100	100	100	100
Asian American					
	Mean	36.07	3.22	-0.42	-0.34
	Standard Deviation	5.83	0.42	0.88	0.94
	Number	868	825	874	874
Black					
	Mean	29.39	2.90	-0.99	-1.05
	Standard Deviation	5.81	0.43	0.92	0.86
	Number	1,268	1,264	1,277	1,277
Mexican American					
	Mean	33.05	3.04	-0.70	-0.66
	Standard Deviation	5.50	0.40	0.84	0.83
	Number	381	381	381	381
Puerto Rican					
	Mean	32.49	3.01	-0.70	-0.71
	Standard Deviation	6.3	0.40	0.96	0.96
	Number	107	105	107	107
Hispanic					
	Mean	33.85	3.14	-0.46	-0.47
	Standard Deviation	6.04	0.42	0.97	0.98
	Number	482	481	484	484
White					
	Mean	37.50	3.26	0.15	0.15
	Standard Deviation	4.89	0.40	0.93	0.97
	Number	18,142	18,301	18,133	18,219

Table 16 presents the means and standard deviations of LSAT score, standardized final cumulative law school grade-point average, and adjusted standardized final cumulative law school grade-point average for each ethnic group. These data show that white participants scored higher than any other ethnic group on the LSAT and also earned higher law school grades. Table 16 also includes comparative means on UGPA. These comparisons are included partly because UGPA was the only other continuous variable that significantly contributed to the explanatory model that already included LGPA and LSAT score, and partly because LSAT score and UGPA combined are better predictors of law school academic achievement than either one alone. Table 17 shows the magnitudes of the LSAT score mean differences and adjusted LGPA mean differences between white participants and participants in each of the other ethnic groups. Upper and lower confidence limits also are included in Table 17. Each of the differences is statistically significant ($p < .01$), but the magnitude of the differences in mean LSAT scores between white and Asian American participants is not of practical significance.

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TABLE 17

Mean differences on LSAT score and adjusted LGPA between white study participants and study participants from selected other ethnic groups

Comparison Groups	Lower Simultaneous Confidence* Limit	Mean Difference	Upper Simultaneous Confidence Limit
LSAT Score			
White - American Indian	2.46	4.54	6.61*
White - Asian American	0.72	1.43	2.15*
White - Hispanic	2.70	3.65	4.61*
White - Mexican American	3.39	4.46	5.53*
White - Puerto Rican	3.01	5.01	7.02*
White - Black	7.51	8.11	8.71*
Adjusted LGPA			
White - American Indian	0.45	0.85	1.24*
White - Asian American	0.35	0.49	0.63*
White - Hispanic	0.44	0.62	0.80*
White - Mexican American	0.61	0.82	1.01*
White - Puerto Rican	0.49	0.87	1.24*
White - Black	1.08	1.20	1.31*

Comparisons significant at .01 level are indicated by ''. Comparisons are based on Scheffe's test, which controls the Type I experiment-wise error rate. Confidence = .99.

Examining Ethnic Group Data in Regression Models. One method for evaluating the role of ethnicity in explaining bar examination outcomes is to estimate parameters for logistic regression models that include LGPA, LSAT score, and ethnicity. The purposes of this analysis were both to determine the statistical significance of the improvement in chi-square over a model that includes only LGPA and LSAT score, and to estimate the odds of passing associated with different ethnic groups relative to whites, who serve as the reference group for these comparisons because of the very large number of white study participants. Results from these models are presented next. Because the number of American Indian and Puerto Rican examinees was so small and unevenly distributed throughout the jurisdictions, they were not included in these analyses. Neither were study participants who identified their ethnic group membership as "other".

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The model that included the three variables—LGPA, LSAT score, and ethnicity—showed a modest but statistically significant improvement over the LGPA and LSAT score model.[85] Although the improvement in model fit was significant, neither the correlation between actual and predicted bar examination outcome nor the percentage of concordant pairs showed an appreciable increase in value.

The next analysis introduced interaction effects between ethnic group and LGPA and between ethnic group and LSAT score. The statistic for testing improvement in model fit was not statistically significant (chi-square = 11.4 with 8 *df*). Thus, there was no further consideration of interaction effects for these data.

Adding Ethnicity to the Geographic Region and Law School Cluster Logistic Regression Models. Ethnicity also was added both to the LGPA, LSAT score, and geographic region model and to the LGPA, LSAT score, and law school cluster model, as a dummy-coded categorical variable. These models were evaluated to determine whether there would still be a significant improvement in model fit from adding ethnicity after differences in geographic region or law school cluster were taken into account. When ethnicity was added to a bar passage outcome model that already contained adjusted LPGA, LSAT score, and geographic region, the chi-square improvement was modest, but statistically significant (chi-square = 16.65 with 4 *df*). Again, neither the correlation between actual and predicted bar examination outcome nor the percentage of concordant pairs showed an appreciable increase in value. The interaction between ethnicity and geographic region was not significant.

Adding ethnicity to a bar passage outcome model that already contained LGPA, LSAT score, and law school cluster also produced a statistically significant chi-square improvement (chi-square = 25.14 with 4 *df*), and there was no increase in the correlation between predicted and actual outcomes.

85. The parameter estimates and associated probabilities, and the odds ratio for the model that included LGPA, LSAT score and ethnicity are as follows.

Selected summary statistics from a logistic regression model of the effects of LGPA, LSAT score, and ethnicity on bar examination outcome

Variable	DF	Parameter Estimate	Pr > Chi-Square	Odds Ratio
INTERCEPT	1	0.22	0.2622	
SCORE	1	0.08	0.0001	1.080
GRADES	1	1.53	0.0001	4.629
Asian American	1	-0.41	0.0001	0.665
Black	1	-0.27	0.0013	0.762
Mexican American	1	-0.13	0.3722	0.880
Hispanic	1	-0.44	0.0010	0.646

The chi-square improvement was 28.24 with 4 *df*. These data show that the odds of passing for Mexican American examinees were not different from those of white examinees when LGPA and LSAT score were the same, but the odds were significantly lower for the other three ethnic groups. The interpretation of the odds ratio is the same as the interpretation explicated for law school cluster data in Appendix E. The data in the table above show that, for study participants who had the same LGPA and LSAT score, being Hispanic or Asian American instead of white reduced the odds ratio to approximately two thirds, while being black reduced it to approximately three quarters.

Cluster Comparison Using Data Only From White Examinees. Questions about the relationship of ethnicity with law school cluster and bar examination outcome could be fashioned from the opposite perspective. That is, the relationship between ethnicity and bar exam outcome could be viewed as a question about whether the significance of law school cluster in explaining bar examination outcome is partly a consequence of the ethnic distribution of students in various clusters. To help address this question, the logistic regression models that included LGPA, LSAT score, and law school cluster as independent variables were executed using data for white examinees only. The results were statistically significant[86] and essentially the same as those that included all examinees (primarily a consequence of the preponderance of white examinees in the study group). When only white examinees were included in the analyses, the odds for passing the bar were slightly lower for examinees in cluster 6 compared to cluster 3 than they were when all examinees were included. Looking again at the data graphically, independent of the regression model, the proportion passing the first bar examination at selected LGPAs was calculated for each cluster using data only for white examinees. These proportions are shown in Table 18 for all clusters and a plot of data for cluster 3 and cluster 5 is shown in Figure 9. Those clusters were selected for illustration because cluster 3 is the reference group and because cluster 5 is the cluster that differs most from cluster 3 and has sufficient data for white examinees throughout the LGPA range. The same differences between clusters are still observed, negating the conjecture that cluster differences might be a consequence of their ethnic make-up.

TABLE 18

Proportion (and number) of white study participants passing their first bar examination at selected LGPAs, by law school cluster

Adjusted LGPA	Law School Cluster					
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
-3.0		0.00 (0)	1.00 (1)	0.33 (1)		
-2.5	0.00 (0)	0.60 (3)	0.44 (4)	0.25 (6)	0.40 (2)	0.00 (0)
-2.0	0.67 (6)	0.50 (15)	0.62 (39)	0.57 (93)	0.38 (21)	0.00 (0)
-1.5	0.76 (28)	0.64 (76)	0.70 (139)	0.68 (348)	0.54 (94)	0.61 (11)
-1.0	0.79 (49)	0.78 (219)	0.85 (419)	0.82 (694)	0.72 (175)	0.52 (14)
-0.5	0.96 (136)	0.89 (424)	0.93 (707)	0.91 (1,089)	0.84 (274)	0.79 (27)
0.0	0.97 (221)	0.96 (619)	0.97 (952)	0.96 (1,248)	0.91 (253)	0.92 (34)
0.5	0.98 (314)	0.97 (618)	0.98 (966)	0.98 (1,208)	0.95 (238)	0.94 (34)
1.0	0.99 (246)	1.00 (529)	0.99 (807)	1.00 (797)	0.99 (158)	0.96 (24)
1.5	1.00 (141)	0.99 (356)	1.00 (506)	1.00 (457)	0.98 (82)	1.00 (14)
2.0	1.00 (70)	0.99 (151)	1.00 (222)	1.00 (210)	0.97 (38)	1.00 (5)
2.5	1.00 (16)	1.00 (40)	1.00 (45)	1.00 (59)	1.00 (8)	1.00 (1)
3.0	1.00 (9)	1.00 (8)	1.00 (6)	1.00 (8)	1.00 (1)	1.00 (1)
Total Number	1,236	3,058	4,813	6,218	1,344	165

86. Chi-square improvement over the model that included only LSAT score and LGPA was 68.18 with 5 *df*.

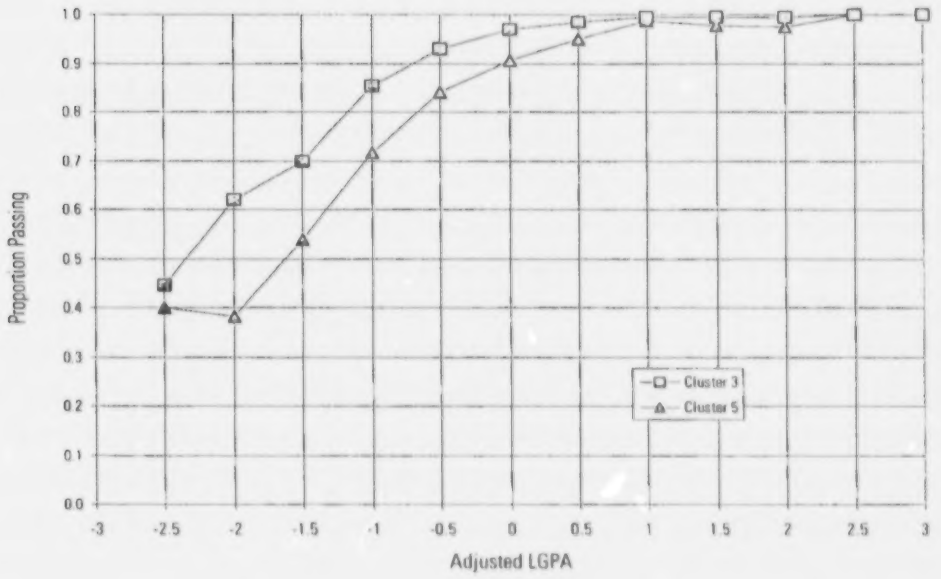

FIGURE 9. *Proportion of white examinees passing their first bar exam among cluster 3 and cluster 5 law school graduates, matched on adjusted LGPA*

Chapter Three: Comparison of Examinees Who Passed With Examinees Who Failed

The data in this study, consistent with several earlier studies, identify LGPA as the single best predictor of bar examination outcome, with LSAT score providing significant additional information. Neither variable changes between the first and second bar attempt. Characteristics of the law school attended add a small but significant amount of information to the model, but no additional exposure to the law school occurs between first and subsequent attempts at the bar. One critical question is why so many students who eventually passed the bar were unable to do so on their first attempt. This question leads to the more important question of what can be done to improve first-time pass rates.

Some explanation might be found in the area of test theory. Both measurement error and practice effects likely had some role in the increased pass rates. Attitudes, expectations, characteristics, and personal circumstances of the examinees might also have had a role. One way to gain some insight into questions of whether certain background characteristics, educational experiences, or personal circumstances might be related to bar passage is to look in depth within and between ethnic groups at the characteristics of those who passed and those who failed their first bar examination. This section reports the results from analyses of this kind, with particular attention directed toward those who failed the first examination but subsequently passed.

The goal of these analyses was to identify potential areas where policy and practice might be targeted to improve future bar examination outcomes. Because there were substantial differences between first-time and eventual pass rates for examinees of color, these analyses looked at those outcomes separately. The three-category analyses presented in this section were conducted with the hope of identifying factors that might differentiate those who passed on the first attempt from those who required multiple attempts, as well as differentiating those who passed from those who failed. These data were examined both within and between selected ethnic groups for which there were sufficient data. Specifically, these analyses looked at Asian American, black, other Hispanic, and white law school graduates only.

TABLE 19

Number and percentage of study participants who did not pass the bar examination on the first attempt by number of attempts, ethnic group, and eventual bar examination outcome

	Number of Attempts								
Ethnic Group	1*	2	3	4	5	6	7	8	Total
Asian American									
Eventual Pass									
Number	-	80	21	5	1	0	0	0	107
Percent**	-.-	74.77	19.63	4.67	0.93	0.00	0.00	0.00	11.13
Never Passed									
Number	22	29	13	12	0	1	0	1	78
Percent	28.21	37.18	16.67	15.38	0.00	1.28	0.00	1.28	8.12
Black									
Eventual Pass									
Number	-	153	54	11	2	1	1	0	222
Percent	-.-	68.92	24.32	4.95	0.90	0.45	0.45	0.00	16.23
Never Passed									
Number	148	61	67	26	3	1	0	0	306
Percent	48.37	19.93	21.90	8.50	0.98	0.33	0.00	0.00	22.37
Hispanic									
Eventual Pass									
Number	-	60	10	2	2	0	0	0	74
Percent	-.-	81.08	13.51	2.70	2.70	0.00	0.00	0.00	14.23
Never Passed									
Number	27	9	12	7	2	0	0	0	57
Percent	47.37	15.79	21.05	12.28	3.51	0.00	0.00	0.00	10.96
White									
Eventual Pass									
Number	-	685	190	30	10	0	1	0	916
Percent	-.-	74.78	20.74	3.28	1.09	0.00	0.11	0.00	4.75
Never Passed									
Number	368	150	88	29	4	2	0	0	641
Percent	57.41	23.4	13.73	4.52	0.62	0.31	0.00	0.00	3.32

*Attempts for examinees who failed the first time but eventually passed by definition are greater than 1.

**Percent shows row percentage except for "Total," which shows the percentage within each ethnic group that falls into each outcome category.

Table 19 shows the number of bar attempts, separately by ethnic group, for those examinees who did not pass the first time. These data show that the majority of examinees who failed the bar on the first attempt tried at least one more time to pass, but they also show that the percentage of nonrepeaters varies considerably across ethnic group. Approximately 2 percent of white (368 of 19,285) and Asian American (22 of 961) examinees failed the first attempt at the bar and did not attempt it again. In contrast, five percent of Hispanic (27 of 520) and nearly 11 percent of black (148 of 1,368) examinees did so. Although, overall, the number of first-time failures who did not make a second attempt is small, they represent a substantial proportion of black and Hispanic law school graduates. The table also shows that among those who failed the first time but eventually passed, the majority passed on their second attempt. Again, there is variation among ethnic groups, with 81 percent of Hispanic eventual passers passing on the second attempt, compared with 75 percent of white and Asian American eventual passers, and 69 percent of black eventual passers. Finally, the data show that among those who had not yet passed, the percentage that continued to try drops off quickly after three or four unsuccessful attempts. These data suggest that, although some of the study participants who had not passed a bar examination at the close of data collection for this study may eventually pass, the overall pass and fail patterns among ethnic groups described in this report are unlikely to change substantially.

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Background Characteristics Data

The relationship between bar examination outcome and a variety of personal and family background characteristics varies by ethnic group. For example, age group was statistically related to bar passage outcome for Asian American, black, and white examinees, but not for Hispanic examinees. These data are shown in Table 20. For the three groups for which the relationship is significant, the magnitude of the effect sizes are in the range that would be considered small (w = .28, .11, and .10, respectively). These data show a higher proportion from younger age groups as first-time passers and a higher proportion from older groups as not yet passing. Consistent with results reported earlier for first-time passers and then for eventual passers, there is no relationship between sex and category of bar passage outcome for any of the ethnic groups.

TABLE 20

Number and percentage of study participants by ethnic group, bar examination outcome, and age group

Ethnic Group	Bar Exam Outcome	Age Group**			
		Less than 22	22-24	24-29	More than 29
Asian American					
	First Pass				
	Number	272	262	175	66
	Percent*	85.80	81.62	78.83	66.67
	Eventual Pass				
	Number	18	44	26	19
	Percent	5.68	13.71	11.71	19.19
	Never Passed				
	Number	27	15	21	14
	Percent	8.52	4.67	9.46	14.14
Black					
	First Pass				
	Number	256	219	224	139
	Percent	68.63	58.56	61.71	54.94
	Eventual Pass				
	Number	58	65	57	42
	Percent	15.55	17.38	15.70	16.60
	Never Passed				
	Number	59	90	82	72
	Percent	15.82	24.06	22.59	28.46
Hispanic					
	First Pass				
	Number	127	115	96	50
	Percent	79.87	72.78	69.06	79.37
	Eventual Pass				
	Number	18	24	25	7
	Percent	11.32	15.19	17.99	11.11
	Never Passed				
	Number	14	19	18	6
	Percent	8.81	12.03	12.95	9.52
White					
	First Pass				
	Number	5,479	5,453	4,153	2,604
	Percent	94.55	92.60	91.29	86.54
	Eventual Pass				
	Number	214	269	222	208
	Percent	3.69	4.57	4.88	6.91
	Never Passed				
	Number	102	167	174	197
	Percent	1.76	2.84	3.83	6.55

*Percent shows column percentages within ethnic group.

**Age at entry to law school.

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Bar examination outcome was related to SES category for Asian American and Hispanic examinees (the effect was large enough to be considered practically significant, with $w = .13$ and .17, respectively), but not for black or white examinees. For both Asian American and Hispanic examinees, the percentage of first-time passers is significantly less for lower-middle than for upper-middle or upper SES examinees, while the percentage of those who never passed is greatest for lower-middle SES examinees. SES by bar examination outcome is shown separately for four ethnic groups in Table 21.

TABLE 21

Number and percentage of study participants by ethnic group, bar examination outcome, and SES

		SES Category			
Ethnic Group	Bar Exam Outcome	Lower-Middle	Middle	Upper-Middle	Upper
Asian American					
	First Pass				
	Number	156	179	235	206
	Percent*	73.93	82.49	81.88	83.74
	Eventual Pass				
	Number	30	26	35	16
	Percent	14.22	11.98	12.20	6.50
	Never Passed				
	Number	25	12	17	24
	Percent	11.85	5.53	5.92	9.76
Black					
	First Pass				
	Number	406	123	67	244
	Percent	60.15	57.75	65.05	64.72
	Eventual Pass				
	Number	102	46	18	56
	Percent	15.11	21.60	17.48	14.85
	Never Passed				
	Number	167	44	18	77
	Percent	24.74	20.66	17.48	20.42
Hispanic					
	First Pass				
	Number	137	87	84	81
	Percent	66.83	75.65	81.55	83.51
	Eventual Pass				
	Number	36	16	12	10
	Percent	17.56	13.91	11.65	10.31
	Never Passed				
	Number	32	12	7	6
	Percent	15.61	10.43	6.80	6.19
White					
	First Pass				
	Number	3,732	4,910	4,647	4,438
	Percent	91.02	91.40	92.46	92.73
	Eventual Pass				
	Number	203	270	213	230
	Percent	4.95	5.03	4.24	4.81
	Never Passed				
	Number	165	192	166	118
	Percent	4.02	3.57	3.30	2.47

*Percent shows column percentages within ethnic group.

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Another family-background variable examined for its potential relationship with bar examination outcome was primary language. The number and percentage of study participants for whom a language other than English was spoken in the home when they were growing up is shown separately for the four ethnic groups in Table 22. The language spoken in the home when these law school graduates were growing up was statistically independent of bar examination outcome for all groups except whites and, although the chi-square statistic was significant for whites, the effect size was not sufficient to be considered of any practical significance ($w = .04$).

TABLE 22

Number and percentage of study participants for whom a language other than English was spoken in the home when they were growing up, by bar examination outcome and ethnic group

	Bar Examination Outcome			
Ethnic Group	First-time Pass	Eventual Pass	Never Passed	Total
Asian American				
Number	649	85	69	803
Percent*	83.63	79.44	88.46	83.56
Black				
Number	70	28	37	135
Percent	8.33	12.61	12.09	9.87
Hispanic				
Number	305	61	39	405
Percent	78.41	82.43	68.42	77.88
White				
Number	1,252	101	70	1,423
Percent	7.06	11.03	10.92	7.38

*Percent shows percentage of total number of participants within each bar passage status category, separately for each ethnic group, who grew up in a household in which a language other than English was spoken.

TABLE 23

Number and percentage of study participants who held a full-time job(s) for two or more years before starting law school, by bar examination outcome and ethnic group

	Bar Examination Outcome			
Ethnic Group	First-time Pass	Eventual Pass	Never Passed	Total
Asian American				
Number	231	46	30	307
Percent*	29.88	42.99	38.46	32.05
Black				
Number	359	103	150	612
Percent	42.94	47.03	49.34	45.03
Hispanic				
Number	132	30	18	180
Percent	34.02	41.10	31.58	34.75
White				
Number	6,337	363	291	6,991
Percent	35.84	39.85	45.61	36.35

*Percent shows percentage of total number of participants within each bar passage status category, separately for each ethnic group, who held a full-time job(s) for two or more years before starting law school.

Work Experience Data

Work experience prior to attending law school also was examined to determine whether it might be related to bar examination outcome. Table 23 shows the number and percentage of study participants, by ethnic group, who held a full-time job for two or more years before starting law school. Full-time work experience (as a dichotomous yes or no response to the question "Since graduating from college, have you held a(ny) full time job(s) for two years or more?") is independent of bar examination outcome within each ethnic group. There are differences across ethnic groups, with the percentage of black participants who worked prior to law school exceeding the proportions from any other ethnic group.

TABLE 24

Number and percentage of study participants who had one or more years of employment in selected law-related fields before starting law school, by bar examination outcome and ethnic group

		Bar Examination Outcome			
Ethnic Group	Law Related Field	First-time Pass	Eventual Pass	Never Passed	Total
Asian American	Legal Secretary				
	Number	32	4	1	37
	Percent*	4.12	3.74	1.28	3.85
	Paralegal				
	Number	53	14	5	72
	Percent	6.83	13.08	6.41	7.49
	Police Officer				
	Number	1	0	0	1
	Percent	0.13	0.00	0.00	0.10
	Probation Officer				
	Number	0	0	0	0
	Percent	0.00	0.00	0.00	0.00
Black	Legal Secretary				
	Number	30	13	11	54
	Percent	3.57	5.86	3.59	3.95
	Paralegal				
	Number	44	24	23	91
	Percent	5.24	10.81	7.52	6.65
	Police Officer				
	Number	11	6	4	21
	Percent	1.31	2.70	1.31	1.54
	Probation Officer				
	Number	7	0	2	9
	Percent	0.83	0.00	0.65	0.66
Hispanic	Legal Secretary				
	Number	18	3	9	30
	Percent	4.63	4.05	15.79	5.77
	Paralegal				
	Number	24	7	10	41
	Percent	6.17	9.46	17.54	7.88
	Police Officer				
	Number	3	2	0	5
	Percent	0.77	2.70	0.00	0.96
	Probation Officer				
	Number	1	0	0	1
	Percent	0.26	0.00	0.00	0.19
White	Legal Secretary				
	Number	549	45	29	623
	Percent	3.10	4.91	4.52	3.23
	Paralegal				
	Number	1,431	92	65	1,588
	Percent	8.07	10.04	10.14	8.23
	Police Officer				
	Number	118	7	10	135
	Percent	0.67	0.76	1.56	0.70
	Probation Officer				
	Number	41	1	3	45
	Percent	0.23	0.11	0.47	0.23

*Percent shows percentage of total number of participants within each bar passage status category, separately for each ethnic group and law-related field.

Among those who held full-time jobs for two or more years, the type of work they did was examined. The number and percentage of those who held full-time jobs for one or more years in selected law-related fields are shown by ethnic group and bar examination outcome in Table 24. The percentage reported in Table 24 is the percentage of the total number in each bar outcome category, separately for each ethnic group, that reported working in each law-related field. The total column shows the total number and percentage of participants from each ethnic group who worked in each of the selected fields. For example, among the Asian Americans who passed the bar on their first attempt, 4.12 percent worked as a legal secretary for one or more years prior to entering law school, and among those who never passed, 1.28 percent worked as a legal secretary. Overall, 3.85 percent of all the Asian American study participants worked in that field. The numbers of participants who reported working in law-related fields are so small that they typically would not be of much interest. They are included here in order to examine the possibility that work experience in a law-related field might provide some advantage in terms of academic success, a concept that carries some intuitive appeal. These data show that paralegal employment was the most frequently reported of the law-related work fields within each of the ethnic groups, and that there was little difference across groups in the proportions that worked in any of the law-related fields. Most importantly, these data do not support a relationship between work experience in a law-related field and pass or fail status on the bar examination. Potential law students may gain direct information about a legal career that may help them make a decision about their interest in the profession. However, there is no indication from this sample that obtaining work experience in a law-related field prior to entering law school would improve one's likelihood of passing the bar.

Personal Factors and Pre-enrollment Academic Preparation Programs

Both personal situations and academic opportunities immediately prior to law school also were examined for evidence of a relationship with bar examination outcome. Table 25 shows marital status by bar examination outcome for each ethnic group. Bar examination outcome is independent of marital status for each ethnic group. These data show that the majority of students were single and that there is little variation across groups. The smallest percentage of single students is found among whites (76.6 percent) and the largest among Asian Americans (85.4 percent).

TABLE 25

Number and percentage of study participants, by bar examination outcome, ethnic group, and marital status

Ethnic Group	Marital Status	Bar Examination Outcome			
		First-time Pass	Eventual Pass	Never Passed	Total
Asian American	Single				
	Number	663	92	64	819
	Percent*	85.66	85.98	82.05	85.40
	Married				
	Number	100	15	12	127
	Percent	12.92	14.02	15.38	13.24
	Divorced				
	Number	11	0	2	13
	Percent	1.42	0.00	2.56	1.36
Black	Single				
	Number	662	178	232	1,072
	Percent	79.28	82.03	76.57	79.11
	Married				
	Number	136	33	54	223
	Percent	16.29	15.21	17.82	16.46
	Divorced				
	Number	35	5	17	57
	Percent	4.19	2.30	5.61	4.21
Hispanic	Single				
	Number	301	59	43	403
	Percent	77.78	80.82	75.44	77.95
	Married				
	Number	69	9	10	88
	Percent	17.83	12.33	17.54	17.02
	Divorced				
	Number	17	5	3	25
	Percent	4.39	6.85	5.26	4.84
White	Single				
	Number	13,588	686	434	14,708
	Percent	76.92	75.30	67.81	76.54
	Married				
	Number	3,515	179	153	3,847
	Percent	19.90	19.65	23.91	20.02
	Divorced				
	Number	546	45	49	640
	Percent	3.09	4.94	7.66	3.33

*Percent shows percentage of total number of participants within each bar passage status category, separately for each ethnic group and marital status.

Bar examination outcomes for examinees who participated in a pre-enrollment academic preparation program were compared with outcomes among examinees who did not participate. Comparisons were carried out separately for each ethnic group. As was the case with law-related work experience, the number and percentage of participants who took part in any of these programs is small and any analysis of data is limited in its utility. It is included here in response to the current interest in and attention to these kinds of programs and because these are the only national bar examination outcome data available related to them. The number and percentage of students who participated in one of three kinds of academic preparation programs—CLEO, a summer program offered by the law school they attended, or a summer program offered by another law school—are shown by ethnic group and bar passage outcome in Table 26.

TABLE 26

Number and percentage of study participants who attended selected pre-enrollment academic preparation programs, by bar examination outcome and ethnic group

Pre-enrollment Program	Ethnic Group	Bar Examination Outcome			
		First-time Pass	Eventual Pass	Never Passed	Total
CLEO					
	Asian American				
	Number	6	1	0	7
	Percent*	0.77	0.93	0.00	0.73
	Black				
	Number	25	6	15	46
	Percent	2.98	2.70	4.90	3.36
	Hispanic				
	Number	7	2	2	11
	Percent	1.80	2.70	3.51	2.12
	White				
	Number	7	4	0	11
	Percent	0.04	0.44	0.00	0.06
Program offered by their law school					
	Asian American				
	Number	38	7	7	52
	Percent	4.90	6.54	8.97	5.41
	Black				
	Number	136	37	69	242
	Percent	16.19	16.67	22.55	17.69
	Hispanic				
	Number	27	11	8	46
	Percent	6.94	14.86	14.04	8.85
	White				
	Number	249	25	18	292
	Percent	1.40	2.73	2.81	1.51
Program offered by another law school					
	Asian American				
	Number	6	1	1	8
	Percent	0.77	0.93	1.38	0.83
	Black				
	Number	6	6	9	21
	Percent	0.71	2.70	2.94	1.54
	Hispanic				
	Number	3	1	0	4
	Percent	0.77	1.35	0.00	0.77
	White				
	Number	80	11	8	99
	Percent	0.45	1.20	1.25	0.51

*Percent shows percentage of total number of participants within each bar passage status category, separately for each ethnic group, who attended selected academic preparation programs.

Percentage in Table 26 is the percentage of the total number of participants within each bar passage category, separately for each ethnic group, who attended selected kinds of academic preparation programs. For example, six Asian American examinees who participated in CLEO passed the bar the first time. Those six were 0.71 percent of all the Asian American examinees who passed on their first attempt. The data in Table 26 show that the most frequently reported type of prelaw school academic preparation was a summer program offered by their own law school. More than 17.69 percent of all black bar examinees participated in such a program. The general category of "summer program offered by their law school" encompasses a variety of kinds of different academic preparation programs and, as such, may mask some relationships between type of program and bar examination outcome. A breakdown of bar examination outcome by type of program was not possible with the generic data collected for this study, but should be the subject of future research. A chi-square test of independence was conducted for each ethnic group within each program type. These data failed to show a significant relationship between participating in an academic program to help prepare for law school and bar examination outcome. The implications of these findings must be considered relative to the criteria for selecting students into these programs. To the extent that these summer programs serviced incoming students identified as at-risk, a finding of no difference between program participants and nonparticipants in bar examination outcomes could indicate that they had a positive impact.

Financial Data

Next, some background data related to financial issues prior to, as well as during, law school were examined to determine whether there was a relationship between bar examination outcome and issues of debt and financial responsibility. The number and percentage of study participants who reported that they worked for pay during the academic year when they were undergraduates are presented in Table 27. The need to work during undergraduate school has been posited as an explanation for poor academic performance, which is of interest because earlier research established a relationship between undergraduate academic performance and law school academic performance.[87] The data in Table 27 show that the proportion of black and Hispanic participants who worked for pay during the academic year when they were undergraduates is significantly greater than the proportion of white or Asian American participants who did so. This finding is consistent with the difference in SES among these ethnic groups reported in prior studies of this cohort.[88] However, the data do not reveal a relationship between working during undergraduate school and bar examination outcome. The chi-square test of independence is not significant for any ethnic group.

Working for pay during undergraduate school may be unrelated to bar examination outcome because undergraduate academic work is farther removed from the information and skills tested on the bar examination than is law school academic work. Thus, a question about the effect of working specifically during law school is of interest. A concern about any activities or responsibilities that might interfere with law school demands is of interest because law school academic performance is more highly related to bar passage than any other variable examined in this study. Students who completed the *Entering Student Questionnaire* indicated whether or not they intended to work for pay, either full time or part time, during their first year of law school. Again testing the possibility that working for pay during the academic year might interfere with academic performance, a chi-square test of independence between intention to work during the first year of law school and bar examination outcome category was estimated for each ethnic group. The chi-square was statistically significant for black and for white participants ($p < .001$), but the effect size was large enough to be considered a small effect ($w = .1$) only for black students. The number and percentage of participants who reported that they intended to work for pay during their first year of law

87. *See, for example,* Wightman, *supra* note 65, at 10.

88. *See* Linda F. Wightman, Women in Legal Education: A Comparison of the Law School Performance and Law School Experiences of Women and Men Law School Admission Council Research Report, Newtown, PA (1996) at 115 note 3 (showing the distribution of the study sample by SES and ethnicity).

school are presented in Table 28. These data also show that the smallest percentage of participants who expected to work for pay was among Asian Americans, and that approximately one quarter within each of the other groups intended to do so. This analysis did not separate full-time from part-time students because the data received from these respondents were not sufficiently clear to accurately make that distinction.

Among those students who indicated that they expected to work during their first year of law school, comparisons by the anticipated number of hours of work are presented in Table 29. Because the total number of participants in each group is very small (one quarter or less of the total participants), the contribution of the further breakdown of these data to the general explanation of bar examination outcomes is minimal. They are included for completeness and to help provide whatever limited data there are to refute some of the unsupported propositions about contributing factors. The percentages within each bar examination outcome category sum to 100 for each ethnic group. For example, among those Asian American students who passed the bar on the first attempt and who expected to work during the academic year, 40 percent expected to work less than 10 hours, 38.5 percent 10-20 hours, 2.2 percent 21-30 hours, and 19.3 percent more than 30 hours. These percentages account for 100 percent of those students. These data are inconclusive with regard to the relationship between number of anticipated hours of work and bar examination outcome, primarily because of the small numbers of respondents in many of the cells.

As a final analysis of the relationship between financial responsibility and bar examination outcome, information from participants indicating for whom they had primary financial responsibility at the time they entered law school was examined. The number and percentage of study participants who had primary responsibility for themselves or for selected others are shown by bar examination outcome separately for each ethnic group in Table 30. These data do not show a relationship between primary responsibility and bar pass status for any of the areas of responsibility for any of the ethnic groups. These data again showed some across-group differences. A larger proportion of blacks than any other group reported having primary responsibility for themselves and for their own child or children.

TABLE 27

Number and percentage of study participants who worked for pay during the academic year when they were undergraduates, by bar examination outcome and ethnic group

	Bar Examination Outcome			
Ethnic Group	First-time Pass	Eventual Pass	Never Passed	Total
Asian American				
Number	599	84	54	737
Percent*	77.19	78.50	69.23	76.69
Black				
Number	740	178	259	1,177
Percent	88.10	80.18	84.64	86.04
Hispanic				
Number	334	63	44	441
Percent	85.86	85.14	77.19	84.81
White				
Number	13,338	688	486	14,512
Percent	75.24	75.11	75.82	75.25

*Percent shows percentage of total number of participants within each bar outcome category, separately for each ethnic group, who worked for pay during the academic year when they were undergraduates.

TABLE 28

Number and percentage of study participants who anticipated working for pay during their first year of law school, by bar examination outcome and ethnic group

	Bar Examination Outcome			
Ethnic Group	First-time Pass	Eventual Pass	Never Passed	Total
Asian American				
Number	126	25	17	168
Percent*	16.24	23.36	21.79	17.48
Black				
Number	172	52	93	317
Percent	20.48	23.42	30.39	23.73
Hispanic				
Number	85	15	13	113
Percent	21.85	20.27	22.81	21.73
White				
Number	4,200	244	217	4,661
Percent	23.69	26.64	33.85	24.17

*Percent shows percentage of total number of participants within each bar outcome category, separately for each ethnic group, who anticipated working for pay during first year.

TABLE 29

Number and percentage of study participants who anticipated working for pay during their first year of law school, by bar examination outcome, ethnic group, and expected number of work hours

Ethnic Group	Expected Number of Hours	Bar Examination Outcome: First-time Pass	Eventual Pass	Never Passed	Total
Asian American	Less than 10 hours				
	Number	47	7	6	60
	Percent*	37.30	28.00	35.29	35.71
	10 - 20 hours				
	Number	51	8	3	62
	Percent	40.48	32.00	17.65	36.90
	21 - 30 hours				
	Number	3	3	0	6
	Percent	2.38	12.00	0.00	3.57
	More than 30 hours				
	Number	25	7	8	40
	Percent	19.84	28.00	47.06	23.81
Black	Less than 10 hours				
	Number	37	6	18	61
	Percent	21.64	11.54	19.57	19.37
	10 - 20 hours				
	Number	82	24	31	137
	Percent	47.95	46.15	33.70	43.49
	21 - 30 hours				
	Number	12	3	6	21
	Percent	7.02	5.77	6.52	6.67
	More than 30 hours				
	Number	40	19	39	99
	Percent	23.39	36.54	40.22	30.48
Hispanic	Less than 10 hours				
	Number	24	7	1	32
	Percent	28.57	50.00	7.69	28.83
	10 - 20 hours				
	Number	27	5	3	35
	Percent	32.14	35.71	23.08	31.53
	21 - 30 hours				
	Number	9	0	5	14
	Percent	10.71	0.00	38.46	12.61
	More than 30 hours				
	Number	24	2	4	30
	Percent	28.57	14.29	30.77	27.03
White	Less than 10 hours				
	Number	1,450	69	53	1,572
	Percent	34.62	28.40	24.54	33.83
	10 - 20 hours				
	Number	1,429	81	47	1,557
	Percent	34.12	33.33	21.76	33.51
	21 - 30 hours				
	Number	238	22	20	280
	Percent	5.68	9.05	9.26	6.03
	More than 30 hours				
	Number	1,071	71	96	1,238
	Percent	25.57	29.22	44.44	26.64

*Percent shows percentage of total number of participants within each bar outcome category, separately for each ethnic group and number of hours anticipated working for pay during their first year of law school.

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TABLE 30

Number and percentage of study participants who had primary responsibility for themselves and others during law school, by bar examination outcome and ethnic group

Ethnic Group	Had Responsibility For		Bar Examination Outcome			
			First-time Pass	Eventual Pass	Never Passed	Total
Asian American	Yourself	Number	537	76	51	664
		Percent*	69.20	71.03	65.38	69.09
	Your spouse	Number	51	9	4	64
		Percent	6.57	8.41	5.13	6.66
	Your own child	Number	37	6	4	47
		Percent	4.77	5.61	5.13	4.89
	Your parents	Number	12	4	5	21
		Percent	1.55	3.74	6.41	2.19
Black	Yourself	Number	712	188	254	1,154
		Percent	84.76	84.68	83.01	84.36
	Your spouse	Number	52	15	24	91
		Percent	6.19	6.76	7.84	6.65
	Your own child	Number	87	20	41	148
		Percent	10.36	9.01	13.40	10.82
	Your parents	Number	11	3	8	22
		Percent	1.31	1.35	2.61	1.61
Hispanic	Yourself	Number	288	47	42	377
		Percent	74.04	63.51	73.68	72.50
	Your spouse	Number	45	3	6	54
		Percent	11.57	4.05	10.53	10.38
	Your own child	Number	31	1	6	38
		Percent	7.97	1.35	10.53	7.31
	Your parents	Number	2	0	2	4
		Percent	0.51	0.00	3.51	0.77
White	Yourself	Number	12,789	668	511	13,968
		Percent	72.14	72.93	79.72	72.43
	Your spouse	Number	1,655	70	83	1,808
		Percent	9.34	7.64	12.95	9.38
	Your own child	Number	1,063	69	76	1,208
		Percent	6.00	7.53	11.86	6.26
	Your parents	Number	64	2	4	70
		Percent	0.36	0.22	0.62	0.36

*Percent shows percentage of total number of participants within each bar outcome category, separately by ethnic group and by financial responsibility category. Within-group column percentages do not sum to 100 both because not every participant responded to this question and because participants could select more than one response.

Academic Expectations

Information about study participants' expectations for academic performance was examined to determine whether examinees who required more than one attempt to pass the bar, or who never passed the bar, entered law school with different academic achievement expectations than those who passed the first time. When students from this cohort entered law school in fall 1991, they were asked what they expected their class rank to be at the end of their first year of law school. Responses to this question were examined to see whether examinees who had difficulty passing the bar, or who never passed it, entered law school with significantly lower expectations than those of examinees who passed the first time. Table 31 shows expected class rank by bar pass status and ethnic group. Bar pass status is independent of expected class rank within every ethnic group. The data also show little difference across ethnic groups in the high academic expectations with which these participants all entered law school.

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TABLE 31

Number and percentage of study participants' expected class rank at the time they started law school, by bar examination outcome and ethnic group

	Ethnic Group											
	Asian American			Black			Other Hispanic			White		
	Bar Exam Outcome			Bar Exam Outcome			Bar Exam Outcome			Bar Exam Outcome		
Expected Class Rank	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed
Top 5%												
Number	65	9	2	94	18	33	23	7	10	1440	73	58
Percent*	8.78	8.74	2.67	11.60	8.41	11.30	6.17	9.86	18.87	8.37	8.25	9.45
Top 10%												
Number	178	29	23	202	61	85	107	21	12	4411	215	136
Percent	24.05	28.16	30.67	24.94	28.50	29.11	28.69	29.58	22.64	25.65	24.29	22.15
Top 25%												
Number	325	32	26	338	79	106	161	20	21	7830	392	248
Percent	43.92	31.07	34.67	41.73	36.92	36.30	43.16	28.17	39.62	45.53	44.29	40.39
Top 50%												
Number	156	28	21	173	56	64	77	23	10	3407	196	162
Percent	21.08	27.18	28.00	21.36	26.17	21.92	20.64	32.39	18.87	19.81	22.15	26.38
Bottom 50%												
Number	15	4	3	3	0	2	5	0	0	101	8	9
Percent	2.03	3.88	4.00	0.37	0.00	0.68	1.34	0.00	0.00	0.59	0.90	1.47
Bottom 25%												
Number	1	1	0	0	0	2	0	0	0	7	1	1
Percent	0.14	0.97	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.04	0.11	0.16
Total												
Number	740	103	75	810	214	292	373	71	53	17,196	885	614
Percent	80.61	11.22	8.17	61.55	16.26	22.19	75.05	14.29	10.66	91.98	4.73	3.28

*Percent shows column percentage.

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Career Aspirations

Finally, the relationship between preferred work setting and bar examination status was examined. Again, the data were obtained from student responses to the *Entering Student Questionnaire*. A question of interest was whether those examinees who never passed the bar, or who required several attempts to pass, had significantly different work aspirations than did examinees who passed on the first attempt. Indications of the settings in which they would most like to work by bar pass status are shown separately by ethnic group in Table 32. Work-setting preference is statistically independent of bar examination outcome for every group except Asian Americans. One large difference for Asian American examinees was low interest in work in a prosecutor's office and in a government agency among those who passed the first time compared with those who eventually or never passed. A higher proportion of those who passed initially or who passed eventually most wanted to work in a judge's chambers compared with those who never passed. Also, a significantly smaller percentage of those who passed on a second or subsequent attempt wanted to work in a large law firm, but the largest percentage aspiring to that work setting was among those who never passed. There were no differences across the three bar pass status groups with respect to aspirations toward public interest work.

TABLE 32

Number and percentage of study participants by ethnic group, bar examination outcome, and preference expressed for first work setting at the time they started law school

	Ethnic Group											
	Asian American			Black			Other Hispanic			White		
	Bar Exam Outcome			Bar Exam Outcome			Bar Exam Outcome			Bar Exam Outcome		
Preferred Work Setting	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed
Judge's Chambers												
Number	121	16	7	101	23	24	48	10	5	2,300	91	57
Percent*	16.18	15.38	9.33	12.56	11.00	8.33	12.70	13.89	8.93	13.39	10.25	9.33
Academic												
Number	22	2	4	28	4	10	12	0	0	451	22	19
Percent	2.94	1.92	5.33	3.48	1.91	3.47	3.17	0.00	0.00	2.63	2.48	3.11
Prosecutor's Office												
Number	36	12	9	61	17	24	31	10	4	1,469	91	57
Percent	4.81	11.54	12.00	7.59	8.13	8.33	8.20	13.89	7.14	8.55	10.25	9.33
Public Defender's Office												
Number	8	0	3	25	8	8	4	1	2	246	16	11
Percent	1.07	0.00	4.00	3.11	3.83	2.78	1.06	1.39	3.57	1.43	1.80	1.80
Large Firm												
Number	198	15	23	143	42	48	60	5	12	2,564	121	67
Percent	26.47	14.42	30.67	17.79	20.10	16.67	15.87	6.94	21.43	14.93	13.63	10.97
Midsized Firm												
Number	137	23	9	138	43	48	79	13	8	3,624	196	87
Percent	18.32	22.12	12.00	17.16	20.57	16.67	20.90	18.06	14.29	21.10	22.07	14.24
Small Firm												
Number	23	6	0	32	11	14	28	2	6	1,390	74	61
Percent	3.07	5.77	0.00	3.98	5.26	4.86	7.41	2.78	10.71	8.09	8.33	9.98
Solo Practice												
Number	14	0	2	24	6	17	11	5	4	352	32	24
Percent	1.87	0.00	2.67	2.99	2.87	5.90	2.91	6.94	7.14	2.05	3.60	3.93
Legislative Office												
Number	7	1	2	15	5	11	10	2	1	455	29	20
Percent	0.94	0.96	2.67	1.87	2.39	3.82	2.65	2.78	1.79	2.65	3.27	3.27
Government Agency												
Number	26	6	5	44	17	22	19	7	1	773	32	46
Percent	3.48	5.77	6.67	5.47	8.13	7.64	5.03	9.72	1.79	4.50	3.60	7.53

(continued)

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TABLE 32 (continued)

Preferred Work Setting	Ethnic Group											
	Asian American			Black			Other Hispanic			White		
	Bar Exam Outcome			Bar Exam Outcome			Bar Exam Outcome			Bar Exam Outcome		
	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed	First-time Pass	Eventual Pass	Never Passed
Public Interest												
Number	64	10	6	85	12	27	36	10	6	1,534	81	71
Percent	8.56	9.62	8.00	10.57	5.74	9.38	9.52	13.89	10.71	8.93	9.12	11.62
Business												
Number	77	8	3	84	13	31	33	5	5	1,657	86	75
Percent	10.29	7.69	4.00	10.45	6.22	10.76	8.73	6.94	8.93	9.65	9.68	12.27
Other												
Number	15	5	2	24	8	4	7	2	2	363	17	16
Percent	2.01	4.81	2.67	2.99	3.83	1.39	1.85	2.78	3.57	2.11	1.91	2.62
Total												
Number	748	104	75	804	209	288	378	72	56	17,178	888	611
Percent	80.69	11.22	8.09	61.80	16.06	22.14	74.70	14.23	11.07	91.97	4.75	3.27

*Percent shows column percentage.

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Chapter Four: Summary and Discussion

The LSAC national longitudinal bar passage study was conceptualized nearly 10 years ago. Substantial data collection efforts began in the fall of 1991 and were sustained for approximately six years. This study is the first ever to present national longitudinal bar passage data along with selected background data for a nearly intact law school class. Specifically, bar examination outcomes were tracked for more than 23,000 of those students who entered law school in fall 1991. A tremendous amount of additional data were obtained from these students and, with their consent, from their law schools and from the boards of bar examiners in the states in which they took their first bar examination. This study summarizes, analyzes, and evaluates a small portion of that data to answer questions about bar passage outcomes in general and bar passage outcomes for examinees of color in particular. One goal of this study was to replace suppositions and anecdotal reports with valid data. That goal was achieved. A second was to identify factors that help explain observed differences in pass rates. That goal was partially met, but continued research will be necessary to identify additional factors to better explain bar examination outcomes.

Unique Contributions of This Study

Although this study presents national data for the first time, it is neither the first attempt to answer questions about bar examination outcomes nor the first study to have access to a large amount of representative data to assist in addressing those questions. None of the earlier studies were comparable to this one, however, with respect to the breadth and depth of the data collected from states, schools, and individual examinees. The data allowed many of the hypotheses and conclusions developed in previous studies to be tested and provided the opportunity for more detailed analyses of factors potentially related to bar examination outcomes than heretofore have been possible.

Summary Findings: Bar Passage Outcomes

Many of the findings in this study confirm findings from earlier studies based on more limited data sets. Most importantly, the study provides empirical data to counter some of the rumor and pessimistic anecdotal information about bar examination outcomes for examinees of color that were prevalent when the study was undertaken. For example, the data reveal within-group eventual bar pass rates for examinees of color that ranged from 78 to 92 percent. These data also substantiate that significant differences in first-time and eventual bar passage rates exist between white examinees and examinees of color within the study population and that the magnitude of those differences varies across different ethnic groups. The data showed that the eventual bar pass rates were considerably higher than the first-time rates for all ethnic groups. This last finding is of particular importance to those interested in questions of access to the legal profession for law students of color.

The study does not find discrepancies in pass rates between women and men. Neither does it find statistically significant differences between female and male examinees within any individual ethnic group.

Statistically significant differences in bar passage rates are observed among law school clusters. The study also finds significant differences in bar passage rates among members of different ethnic groups who attended law school in the same cluster, and documents differences within each ethnic group across the six law school clusters. These differences were confounded with differences in level of academic preparation and law school achievement, and subsequent analyses were performed to separate the effect of cluster from the effect of academic preparation and achievement measures.

The data obtained for this study provide a unique opportunity to examine not only the distribution of examinees of color across jurisdictions, but also differences in outcome by jurisdiction. In order to maintain the confidentiality of individual jurisdictions, which was a condition of participation for most jurisdictions, data are grouped by geographic region for most reporting. When jurisdictions are grouped by geographic region, statistically different bar pass rates are observed among them. The study also finds that the relative concentrations of examinees of color in different jurisdictions do not parallel the concentrations of white examinees. Neither are the relative concentrations of examinees of color consistent from one ethnic group to the other.

The study data show variation in the overall percentage of examinees that passed when comparisons are made among jurisdictions, and suggest that the stringency of the pass/fail standards varied from jurisdiction to jurisdiction. Analyses were undertaken to explore the magnitude and extent of that variation. Summary data on three variables related to pass/fail outcomes—adjusted LGPA, LSAT score, and MBE scale score—were examined across jurisdictions separately for passing and failing examinees. These data provide support for the proposition that there is considerable variation in the stringency of the passing criteria among certain jurisdictions. The data, however, also show that for each of the three variables, most of the variation was associated with a small number of jurisdictions at the high and low ends of the distributions. When jurisdictions were ranked from high to low on each variable, based on the scores of passing examinees, the relative position of jurisdictions varied slightly across the three variables. Even so, most (but not all) jurisdictions remained in essentially the same general area of the distribution, suggesting some consistency in ratings of relative stringency regardless of the measure used.

Building and Interpreting Logistic Regression Models

An important focus of this study was to identify factors that were related to bar examination outcome. A longer-term goal of the larger research project was to gather data that could provide insights and direction to legal education, particularly with respect to changes in educational practice and policy that might result in improving opportunity for graduates to pass the bar and enter the legal profession. To that end, correlation models were built using the data collected from this cohort to identify factors that are significantly related to bar examination outcomes and that provide unique information to help understand those outcomes.

In addition to LGPA and LSAT score, several other variables were examined for their unique contributions. Although the other variables were related to bar examination outcomes, they also were strongly related to LGPA and/or LSAT score. Once those two variables were in the model, many of the other variables did not add significant unique information and therefore did not improve the fit of the model. Those that did not yield significant model improvement include SES, law school stratum (a grouping of law schools based on median LSAT scores), and sex. UGPA and an index of undergraduate-school selectivity provided statistically significant model fit but negligible improvement in the amount of variance accounted for by the model. This result is a likely consequence of the relationships of either UGPA or undergraduate school selectivity with both LSAT score and LGPA. These findings were consistent with those reported in earlier studies of bar examination outcomes.

Statistical Issues Related to the Models

The models provide some important and useful information about factors related to bar examination outcomes, so long as they are interpreted and discussed within the constraints of both the kind of data available for analysis and the analytic methods used. Most importantly, the data gathered for this study were nonexperimental. That is, none of the independent variables were fixed or manipulated in this study. Additionally, the models were developed using data provided by study participants. As such, the models simply report relationships observed in the data; they do not make claims about cause and effect. Distinctions between observed relationships that are of importance and cause and effect implications that may or may not be supported by these data and these models are highlighted in appropriate places in this discussion section.

Examining the two variables that showed the strongest relationship with bar passage—LGPA and LSAT score—serves as an example of this distinction. The models show the change in the odds of passing the bar associated with a one-point increase in grades or a one-point increase in LSAT score. That change in odds provides a picture of the relationship that existed among those variables for the 1991 entering-class study cohort. This relationship does not imply that any means of raising either of these predictors will *cause* an increase in bar passage. Rather, it suggests that the academic achievement underlying the grades and test scores of these study participants was strongly related to bar outcomes. A reasonable policy interpretation of these models would be that improving academic performance in undergraduate school and/or law school through curriculum improvement or special support programs would increase the odds of passing the bar exam. Such improvement would likely be reflected in higher LSAT scores and/or higher law school grades, but that outcome is not guaranteed. More importantly, the models do not suggest that an effort to artificially raise test scores or grades, e.g., by relaxing law school grading standards, would increase the odds of passing the bar examination.

A second consideration important to appropriate interpretation of the findings is an understanding of the meaning of the correlation coefficients reported for these models. Both LGPA and LSAT score are significantly related to bar examination outcomes among this study's participants. The correlation between the outcome predicted by those two variables and the actual bar examination outcome is .52 when the data are analyzed for all jurisdictions combined and .58 when a separate model is formed for each jurisdiction. On the one hand, this is a relatively high correlation for a two-variable behavioral science research model. It also confirms relationships identified in earlier studies. But a model that includes only these two explanatory variables leaves a substantial amount of the variability in bar examination outcomes (approximately 68 percent) still unexplained. This study evaluated many additional models that were formed by adding new variables to the LGPA and LSAT score model. Even though two other measurement variables (UGPA and undergraduate school selectivity) provided statistically significant improvement to the chi-square statistic of model fit, the increase in the amount of variance explained by the expanded models was less than one percent for each. The remaining variance might be explained by a host of still other factors including, for example, access to information about and preparation for the bar exam. The identification and study of other potential explanatory factors that were beyond the scope of this report should be undertaken in the future.

Evaluating Differences in Pass Rates Among Law School Clusters

Unique to this study is the availability of data to explore on a national basis the relationship between law school characteristics and bar examination outcomes. Differences in bar passage rates across different law schools were not a surprising outcome because the academic credentials of law students varied by law school. In this study, however, the explanatory value of law school cluster (a surrogate for individual schools in these models, constructed so that sufficient sample sizes would be available for analysis) was examined after the effects of LGPA and LSAT were already taken into account. If differences

in bar examination outcomes were primarily a consequence of differences in students' academic ability, adding law school cluster to a model that already includes LGPA and LSAT score would not be expected to result in an improvement in model fit. For the data from this study, adding law school cluster did show a significant improvement. When LSAT score and LGPA were already in the explanatory model, the data did not show that greater odds of passing were associated with the clusters that included the most highly selective law schools or the highest credentialed law students. Instead, the model showed that for a fixed LGPA and a fixed LSAT score, the probability of passing the bar was higher for graduates of schools included in the cluster primarily populated by public law schools that were moderately selective and among the least expensive of all U.S. law schools. This cluster was labeled Cluster 3. Importantly, the parameters obtained from the model were based on observed data for this study sample and they helped explain the relationships that were observed. The model is not a causative model and does not imply that being in cluster 3 schools *causes* higher pass rates than being in cluster 1, 5, or 6 schools. Rather, it reports that for participants in this study, pass rates differed by law school cluster when LGPA and LSAT score were the same. Determining whether there is a *causative* relationship between law school and bar exam outcome and, if there is, identifying the factors that contribute to that relationship, should be the subjects of future research.

Evaluating Differences in Pass Rates Among Ethnic Groups

When ethnicity was added to the logistic regression model that already included LGPA and LSAT score, significant improvement in model fit was observed. For examinees from each minority ethnic group in this study, the odds of passing are less than one when compared to white examinees. Additional work with the logistic regression models suggested that two likely explanations for this result—differences among law schools and differences in the pass/fail standards in different regions of the country—do not account for it. That is, significant improvement in model fit also resulted when ethnicity was added to two different three-variable models: one that included LGPA, LSAT score, and law school cluster, and another that included LGPA, LSAT score, and geographic region. Lastly, the interactions between ethnicity and law school grades and between ethnicity and LSAT score were tested and were not found to be significant. Interactions were important to the interpretation of these data because they ask whether the relationship between bar passage outcome and LGPA or LSAT score was greater for members of some ethnic groups than for others. Because these data did not support the presence of interactions for either variable, only main effects were explored in the remainder of the study. An important consideration in interpreting these findings again relates to the data collection process that was undertaken and the models that were built. Specifically, when ethnicity was added to the logistic regression models, the only interpretation that is made about any group is a comparison with the reference group, which for these analyses were whites. These data provided useful information for understanding relationships among the studied factors, but did not provide useful information from the perspective of predicting outcomes. That is, as reported earlier, the predicted pass rates resulting from adding ethnicity to the model do not result in correlations with actual pass rates that are meaningfully higher than those produced by the model that does not include ethnicity. The meaning of these results is that the relationships among LGPA, LSAT score, and bar examination outcome are essentially the same for members of different ethnic groups and the odds of passing are slightly but consistently lower for examinees of color compared to white examinees.[89]

89. Earlier studies that focussed on developing prediction models reported that ethnicity was not a significant variable after LSAT and LGPA were in the model. The data from this study are consistent with those findings. That is, when regression systems for a categorical variable are parallel, adding the categorical variable does not alter the correlation among the criterion and the other predictor variables. The likelihood ratio χ^2 improvement indicates a better model fit when the displacement of those parallel systems is taken into account.

Exploring Differences Among Examinees in Three Outcome Categories: First-time Pass, Eventual Pass, and Never Passed

The final section of this report examined selected characteristics of participants who passed the bar the first time and compared them with those who passed eventually and those who never passed. These comparisons were done within ethnic group in order to avoid confounding differences between groups with differences between passing and failing bar examinees. An important finding of these analyses is the relatively large proportion of examinees of color, particularly black examinees, that failed the bar examination on the first attempt and did not make a second attempt. This finding merits further research.

A variety of variables typically related to poor academic performance were examined to determine whether they were related to bar examination outcome. For these data, growing up in a home where a language other than English was spoken, having to work for pay during undergraduate school, and having financial responsibility for themselves or others during law school failed to show any relationship with bar examination outcome. Variables that were posited to improve academic performance, such as general full-time work experience before attending law school, law-related work experience, and participating in a summer academic preparation program also failed to show a relationship. An important caveat is that the small sample sizes and the selection criteria for students accepted into pre-enrollment programs, which were not taken into consideration in these analyses, make conclusions about these programs very tentative. Academic expectations at the start of law school also were analyzed to determine whether those who failed entered law school with lower self-expectations, but no relationship was found. Finally, there was no relationship between preferred work setting upon graduation and bar examination outcome.

Only one factor, age group of the examinees, was statistically significant across all ethnic groups. The proportion of first-time passers tended to decrease as age increased and the proportion that never passed increased as age increased. SES was significant for Asian American and Hispanic test takers, but not for black or for white test takers. A significant relationship also was observed between intent to work for pay during the first year of law school and bar examination outcome for black test takers, but not for test takers from any other group. There was a suggestion in the data of a relationship between the number of hours intended to work (i.e. reported work plans at entry to law school) and bar outcome. The sample, however, was too small for definitive conclusions and it was confounded by the inability accurately to differentiate between full-time and part-time students in the data set. A separate study should be undertaken to attempt to disentangle work during the first year from full-time or part-time status. Follow-up work also should be done to determine whether intention to work for pay during the first year of law school translated into actual work during that period.

Social Policy Issues Related to the Findings

A significant caution in interpreting findings from this study, from a social policy perspective, is the important distinction between exploratory models and cause-and-effect relationships. Specifically, the data show a significant relationship between LGPA and bar examination outcome. These data should not be interpreted to suggest that encouraging students to attend law schools where they have the potential to earn relatively higher grades would necessarily lead to a higher probability of passing the bar exam. Higher grades do not "cause" a higher probability of bar passage. Rather, there is a relationship between the two in the data observed for this study. This does not mean that the relationships would hold if students were shifted into a different environment where they might earn a higher LGPA for the same amount of legal knowledge, or less.[90] Moreover, there is nothing to guarantee that such a shift would have resulted in significantly higher grades. In fact, possible differences in LGPA that would result from attending a different school may not be relevant when LGPA is adjusted for differences among schools, as it was in this study.

90. This illustration is not meant to suggest that a student's move to a school that provided a more supportive or comfortable environment that resulted in better academic achievement would not improve the likelihood of bar passage. Rather, it is focusing on an example of differences in relative academic standing as a consequence of the academic competitiveness of other students in the same school.

The data from this study help refute the claim of some opponents of affirmative action that students of color are harmed by being placed in academic situations where they will earn grades below the class average. First, the data show that when examinees are matched on the two explanatory variables (i.e., when they have the same LSAT and adjusted LGPA), the probability of passing the bar examination varies by law school cluster. The differences in probability of passing across clusters are largest for examinees below the mean on the LSAT and LGPA scales. Explicitly, these data demonstrate that for an examinee with a specified LSAT score and LGPA, the probability of passing the bar varies by law school cluster. Thus, it does not necessarily follow that higher grades at a less competitive school would increase the probability of passing.

Note that adjusted LGPA, not within-school LGPA, was used in these models. The adjusted LGPA used in this report was an attempt to estimate the LGPA that a student would have earned if all schools' LGPAs were directly comparable. This adjustment slightly raised the LGPA of students at more academically competitive schools and slightly lowered the LGPA at less competitive schools. These analyses suggest that the advantage of attending some law schools, from the perspective of probability of passing the bar examination, has the potential to offset the disadvantage of earning a slightly lower LGPA at those schools.

Conclusions

The data from this study refute the pessimistic anecdotal claims about minority bar passage rates that prompted the initiation of this study. The major findings also confirm much of what has been reported about bar examination results by individual law schools or individual jurisdictions that undertook serious empirical analyses of bar passage outcomes using available racial/ethnic data. The major contribution of this study is the assembly of national data to help inform both potential students who are considering law as a career and legal educators who are charged with providing excellent legal education to students who are diverse in background, expectations, and educational preparation. The data show that among minority ethnic groups, some of whose members entered law school with academic credentials substantially below the majority of the admitted students, eventual bar passage rates ranged between 78 and 92 percent. These data provide positive support both for admission practices that look beyond LSAT scores and UGPA to define merit, and for a legal education system that adequately services students whose needs and preparations vary.

There is also a more sober message in the data. Both first-time bar passage rates and eventual bar passage rates were significantly lower for examinees of color than they were for white examinees. Pass rates were lowest for black examinees, the group that made-up the largest proportion of examinees of color. While the 78 to 92 percent pass rates are a reflection of success, neither legal educators nor the profession should be complacent about them. These numbers also tell us that approximately 8 to 22 percent of the law students of color who entered law school in fall 1991, and persisted and graduated, did not enter the profession. Both legal education and the legal profession need to examine this loss through hard questions about their policies and practices.

This study demonstrates that law school grades and LSAT scores are strong predictors of bar examination outcomes and that there are significant differences on both of these predictor variables among ethnic groups. The importance of differences among groups on those two variables should not be overlooked. Data presented in this report demonstrate a higher level of academic risk within several groups of students of color compared to the average of white students in the same entering class. It is partly because differences in academic background and preparation both exist and are of the magnitude demonstrated in these data that affirmative action practices continue to be necessary to achieve ethnic diversity in legal education. Much additional work needs to be done to understand the variables that contribute to those academic performance discrepancies, as well as how to intervene to alter them. Until those differences are eradicated, the work of preparing a diverse body of law students for entry to the profession must be undertaken with some measure of realistic expectations commensurate with the assumed academic risk. But it must be undertaken with a conviction that students who can succeed in the academy can also enter and succeed in the profession, and with a dedication to enabling that success.

August 5, 1991

We write to solicit your participation in the national bar passage research project that the Law School Admission Council is conducting. This research project will attempt to identify, for the first time on a national basis, bar examination passage rates by gender and ethnic subgroup. In addition, the study will analyze a range of factors that may contribute to success or failure in law school and on the bar examination. The Bar Passage Study is a major undertaking that will result in the development of a confidential research database on law students, the law school experience, and bar passage. We urge your cooperation with this study because the participation of state boards of bar examiners is critical to its success. Additional information about the study is contained in the enclosed article by Henry Ramsey, Jr., Dean of Howard University School of Law and Chair of the LSAC Bar Passage Study Workgroup, entitled: "Law Schools and Bar Passage Rates."

The Bar Passage Study is sponsored by the Law School Admission Council. It has been endorsed by the American Bar Association, the Conference of Chief Justices, and the National Conference of Bar Examiners, among other legal organizations.

The following 21 states already have agreed to participate in the study: Alabama, Arizona, California, Colorado, Connecticut, Florida, Idaho, Illinois, Iowa, Maine, Maryland, Minnesota, Mississippi, New Jersey, New Mexico, New York, North Carolina, Tennessee, Texas, Utah, and Wisconsin. Moreover, the boards of bar examiners in Indiana and Oklahoma have recommended to their Supreme Courts that they participate in the study. In addition, over 150 American Bar Association approved law schools have agreed to participate in the study, a list of which is enclosed with this letter.

The decision by states to participate in the Bar Passage Study has, in most cases, been based on several factors. Perhaps the most important factor is the desire to contribute in a unique and meaningful way to the first national survey of this magnitude. Jurisdictions are aware of the excellent professional reputations of the study designers and the organizations endorsing the study. They also have responded positively to the attention that has been directed to maintaining the confidentiality of data, and to easing the administrative burden for agencies that lack the resources to gather local data. The study designers have been, and will continue to be, responsive to concerns identified by bar administrators and bar examiners.

The Bar Passage Study is divided into two parts. In the first part of the study, LSAC will analyze and describe the bar examination performance of students who graduated from law school in 1988 and 1989. For each administration of the bar examination between July 1988 and February 1991, LSAC will ask that you provide it with the following information for individuals who graduated from law school in 1988 and 1989:

1. Identification of Candidates taking the examination:
   a. Name
   b. Social Security Number
   c. Name of law school awarding degree, if any

2. Bar examination scores for each candidate:
   a. Overall scores:
      i. Total combined bar examination score, if applicable
      ii. Pass/Fail decision
   b. MBE scores:
      i. MBE Total scaled score
      ii. MBE part scores
   c. Essay scores
      i. Overall score (both scaled and raw scores, if applicable)
      ii. Subject-by-subject scores, if available

We do not now request nor will we request in the future any data or information from you concerning the race, sex, or ethnicity of any applicant for admission to the bar.

The National Conference of Bar Examiners has agreed to coordinate the release of the MBE data, held by American College Testing, directly to LSAC for any state that would find it a more efficient way to release the data. NCBE's data tapes contain the MBE total scores and part scores by state for all examinations administered from July 1988 through February 1991. The only identification on the NCBE data tapes is examination number. States authorizing release of NCBE data would need to provide LSAC with a list of names, social security numbers, and examination numbers in order to match MBE score data to the bar examination data provided by states and to law school performance data.

LSAC recognizes that the compilation of bar examination information needed for the Bar Passage Study may require additional work for bar administrators in many states, and it is prepared to pay each state a small stipend to help defray the costs associated with this work. The amount of the stipend is based on the number of candidates tested annually by the state: 5,000 or more candidates, $2,000; between 1,001 and 4,999 candidates, $1,000; 1,000 or fewer candidates, $500. Although this stipend may not cover the full cost of compiling the data, it represents LSAC's commitment to work with state boards of bar examiners to obtain their participation in this important study.

The second part of the Bar Passage Study is a longitudinal study of students who first enter law school in the Fall of 1991. Through regular questionnaires, LSAC will follow a sample of approximately 6,000 to 8,000 of these students while they are in law school and taking the bar examination. In order to analyze the bar examination performance of these students, LSAC will identify the individuals and will ask that you provide it with information about their bar examination performance.

LSAC is taking measures to enable it to assure every student participating in the study absolute confidentiality. No information will be reported at any time that discloses personal identity, and all information collected as part of the study will be maintained in strict confidence. Bar passage rates for individual schools will not be revealed.

LSAC will soon contact you to discuss participation in the Bar Passage Study. Enclosed with this letter is a copy of the research design for the study, and other information you may find helpful in reaching your decision about participation in the study. Even before LSAC communicates with you, please feel free to contact the principals involved in its design and implementation to discuss the study, or to obtain any of these materials. Please direct your questions to Dr. Linda Wightman, LSAS Vice President for Test Development and Research (215-968-1184) or Professor George Dawson, at the University of Florida College of Law (904-392-2203).

We very much help that you will cooperate in this endeavor.

Sincerely,

John J. Curtin, Jr.
President,
American Bar Association
Partner,
Bingham, Dana and Gould

Vincent L. McKusick
Chief Justice,
Supreme Judicial Court of Maine
President,
Conference of Chief Justices

Armando M. Menocal, III
Chair,
National Conference of Bar Examiners

Henry Ramsey, Jr.
Dean and Professor,
Howard University School of Law
Chair,
LSAC Bar Passage Study Workgroup

Charles E. Daye
Professor,
University of North Carolina School of Law
President,
Law School Admission Council

INFORMED CONSENT FORM

You are asked to read the following material to ensure that you are informed of the nature of this research study and of how you will participate in it, if you consent to do so. Signing this form will indicate that you have been so informed and that you give your consent. Federal regulations require written informed consent prior to participation in this research study so that you can know the nature and the risks of your participation and can decide to participate or not to participate in a free and informed manner.

You are asked to participate in a longitudinal study designed to improve understanding of success in law school and successful entry into the legal profession. The ***Bar Passage Study*** is being conducted by the Law School Admission Council (LSAC), with the support of the American Bar Association and its Section of Legal Education and Admissions to the Bar, the Association of American Law Schools, the Conference of Chief Justices, the Council on Legal Education Opportunity, the National Conference of Bar Examiners, the National Bar Association, and the National Asian Pacific American Bar Association. The study is being directed by an LSAC committee currently composed of the following individuals:

Dean Henry Ramsey, Jr. (Chair)
Howard University School of Law

Professor George L. Dawson,
University of Florida College of Law

Professor David S. Hill,
University of Colorado School of Law

Professor Alex M. Johnson,
University of Virginia School of Law

Mr. Armando M. Menocal,
Attorney, Public Advocates,
San Francisco, California

Honorable Joseph R. Quinn,
Chief Justice, Colorado Supreme Court

Honorable Richard D. Simons,
Judge, New York Court of Appeals

Professor Katherine L. Vaughns,
University of Maryland School of Law

This ***Bar Passage Study*** is the first nationwide, comprehensive, longitudinal bar passage study to be undertaken in the United States. Its purpose is to identify the factors that contribute to successful entry into the legal profession. A thorough compilation of bar passage rates, and the characteristics, attributes, and law school experiences of the individual test-takers is necessary to identify those factors.

You and other students entering the nation's ABA-approved law schools this fall are being asked to fill out the accompanying ***Entering Student Questionnaire***, and to consent to the release of information about your performance in law school and the results of any bar examinations you may take after graduation from law school. A sample of approximately 8,000 students will be requested to respond to additional questionnaires in the future. More specifically, if you are selected to be part of the longitudinal study, you will be asked to complete one additional questionnaire and/or a personal interview during each of the three years of law school. You should be able to complete each questionnaire or interview in approximately 20 minutes.

There is no risk to you of harm of any type from participation in the ***Bar Passage Study***. You may be concerned that some of the questions and information gathered seem quite personal, but if there are any questions you would prefer not to answer, you are free to leave them unanswered. Also, if you are selected for further participation, you may decline to participate and you may completely withdraw from this study at any time, without penalty.

LSAC and its operating subsidiary, Law School Admission Services, assure the confidentiality of all of the information you provide. When you complete the questionnaire, you should place it in the attached envelope and seal the envelope. The sealed envelopes will be returned to the principal investigator by your law school. A code number will be assigned to your name, and the sheet containing personally identifiable information will be removed from the questionnaire. Names and addresses will be retained in a separate file. They are necessary to allow researchers to contact those students who will participate in the longitudinal phase of the study. The collection of Social Security numbers is necessary to allow researchers to match students' law school performance data with their bar examination data. Data will be analyzed using the assigned code numbers, and all personally identifiable data collected for this study will be kept confidential and destroyed at the conclusion of the study. Results of the study will be reported in a manner in which no individual can be identified.

If you have questions regarding your participation in the ***Bar Passage Study*** you may contact:

Dr. Linda F. Wightman, Principal Investigator
LSAC Bar Passage Study
c/o
Law School Admission Services
Test Development and Research Division
P.O. Box 40
Newtown, PA 18940

AUTHORIZATION

I understand the above information and voluntarily consent to participate in the study entitled ***LSAC Bar Passage Study***. I further consent to the release of my law school and bar examination performance data to LSAC/LSAS for use in the ***Bar Passage Study***.

X_____ _____
Participant's Signature Date

Dear First Year Law Student:

We want you to participate in an important national study. Please read on. Thank you!

* *Why We Ask You to Complete this Questionnaire* *

You are one of some 40,000 students starting legal education at ABA-accredited law schools this fall. You know that earning your law degree will require your personal and financial commitment. You may know also that your law school will devote many resources and that your teachers will devote much energy to your education. You might be surprised, though, to know how very little systematic analysis has been done on a national level about the factors that may account for success in law school and on the bar examination. All of us know intuitively that strong educational preparation is vital. But since virtually all successful applicants have that, we want to discover other factors that may contribute to success.

* *Who is Doing this Study and What is Involved* *

The Law School Admission Council (LSAC) is sponsoring the study to examine success in law school and on bar examinations. This fall, as part of this nationwide study, we are asking students starting law school to complete this questionnaire. Later, we will ask a smaller group of students (a sample) to participate in one or more follow-up (longitudinal) studies during law school and through the bar examination.

* *Legal Organizations Support this Study* *

Because this study is very significant, it is supported by the American Bar Association as well as its Section of Legal Education and Admissions to the Bar, the Association of American Law Schools, the Conference of Chief Justices, the Council on Legal Education Opportunity, the National Conference of Bar Examiners, the National Bar Association, and the National Asian Pacific American Bar Association. Your law school is cooperating by administering this questionnaire and has agreed to supply law school academic performance data. Many state boards have agreed to supply bar examination performance data.

* *Your Identity Will Be Protected* *

LSAC is absolutely committed to protecting your identity and maintaining data confidentiality. Other than the professional researchers conducting this study, no one will have access to personally identifiable data about you. All data will be kept under lock and key. After use, personally identifying linkages in the data will be destroyed. No students or law schools will be identified in any reports issued as a result of this study.

* *Please Sign the Consent Form* *

Please authorize release of data to LSAC by signing the informed consent statement in this booklet on page 3.

* *Now You See Why We Need Your Participation* *

We hope you have decided to complete the questionnaire. If so, please continue by entering your name and social security number on the questionnaire. There are two very important reasons for this. First, if you are selected to be in the follow-up study, we will need that information to contact you and ask you if you would be willing to participate. Second, it will allow us to match the data you provide to us on this questionnaire with data that we obtain from other sources, such as from the law school you are attending or from a state board of bar examiners. No other uses will be made of personally identifying information.

* *A Concluding Note* *

We hope, indeed believe, that our study could lead us to a better understanding about legal education. What we learn just might help legal education in the future to become a more successful and rewarding experience for all students. Thank you for your assistance and best wishes as you begin law school!

Sincerely,

Charles E. Daye
Professor, University of North Carolina
School of Law
President, Law School Admission Council

Henry Ramsey, Jr.
Dean and Professor, Howard University
School of Law
Chair, LSAC Bar Passage Study Workgroup

Even though the percentage of law school graduates who were matched to a bar examination outcome is very high, characteristics of those participants who were not matched needed to be examined to determine whether there was evidence of systematic bias in the missing data, particularly with respect to the variables of interest to these analyses. First, information about the graduation status of study participants for whom a graduation date was missing was examined. Next, the ethnicity and gender of those who graduated but were not matched to bar examination data were compared with those who were matched. Finally, indicators of academic achievement were compared for the two groups.

TABLE C1

Graduation status of study participants

Graduation	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not yet	113	0.4	113	0.4
Stopped out	2,431	8.9	2,544	9.3
Out of study	108	0.4	2,652	9.7
Graduated	24,814	90.3	27,466	100

Note. Frequency missing = 12

Table C1 shows that the majority of those for whom graduation dates were missing were confirmed by their attending law school to have dropped out of law school. The confirmations from participating schools did not differentiate between those who were academically dismissed and those who dropped out for other reasons. Some analyses of reasons for dropping out of law school after the first year can be found in Linda F. Wightman, *Women in Legal Education: A Comparison of the Law School Performance and Law School Experiences of Women and Men* (LSAC Research Report, 1996). The data also show that a small number (113) were still attending law school as of fall 1996 when data collection for this study concluded. Most of the 108 students who are identified as "out of the study" were so categorized because they transferred to a law school that was not participating in this study and, therefore, their final grades and bar passage information were unavailable. In addition to the 108 students identified in Table C1, there were an additional 93 students who transferred to a nonparticipating school but who were matched to data provided by participating state boards of bar examiners. Data from those 93 students were included, when appropriate, in summary data about bar examination outcomes, but, by necessity, were excluded from analyses and summary tables that were school specific. A small number of those in the out-of-study category were deceased. Only twelve of the original 27,478 study participants attended law schools that did not respond to LSAC's request for information and were lost to the study!

TABLE C2

Number and percentage of matched and not-matched study participants by ethnic group

Ethnic Group	Matched	Not Matched	Total
American Indian			
Number	107	11	118
Percent*	0.46	0.64	
Asian American			
Number	961	88	1049
Percent	4.16	5.15	
Black			
Number	1,368	134	1502
Percent	5.93	7.84	
Mexican American			
Number	398	22	420
Percent	1.72	1.29	
Puerto Rican			
Number	128	13	141
Percent	0.55	0.76	
Hispanic			
Number	520	35	555
Percent	2.25	2.05	
White			
Number	19,285	1,386	20,671
Percent	83.54	81.10	
Other			
Number	319	20	339
Percent	1.38	1.17	
Total			
Number	23,086	1,709	24,795
Percent	93.11	6.89	100
Frequency missing	17	2	

*Percent shows column percentages.

Table C2 shows the distribution of the 24,814 participants known to have graduated by bar examination data matching status and ethnic group membership. These data show some small differences in terms of percentage of the total group among different ethnic groups. Specifically, the unmatched group included a slightly smaller percentage of white participants (81.1 percent compared to 83.5 percent) and a slightly larger percentage of Asian American (5.2 vs. 4.2 percent) and black participants (7.8 vs. 5.9 percent). These differences resulted in a substantially significant chi-square test of independence for this very large sample ($p = .007$), but the effect size was very small ($w = .03$) and of no practical significance. Among the 19 participants who did not report their ethnicity, 17 were matched to bar passage data, and two were not matched.

TABLE C3

Number and percentage of study participants by sex and matched/not-matched status

Sex	Matched	Not Matched	Total
Female			
Number	10,175	762	10,937
Percent*	44.05	44.54	44.08
Male			
Number	12,923	949	13,872
Percent	55.95	55.46	55.92
Total			
Number	23,098	1,711	24,809
Percent	93.10	6.90	100.00
Frequency missing	5	0	

*Percent is percentage of column except in the Total row, which shows percentage of row.

Table C3 presents the distribution of matched and unmatched participants by gender. Bar examination matching status and gender were statistically independent. Differences by law school cluster are shown in Table C4. Again, the differences in percentage varied slightly, primarily for cluster 2, which makes up 18.6 percent of those matched but 22.1 percent of those not matched, and for cluster 4, which makes up 34.6 percent of the matched sample and 29.6 of the unmatched sample. As was observed for the gender data, the chi-square test of independence suggested that law school cluster was not statistically independent of being matched with bar passage data ($p = .001$), but this outcome was a consequence of the large sample size. Cohen's $w = .05$ confirmed a lack of practical significance.

TABLE C4

Number and percentage of study participants by law school cluster and matched/not-matched status

Law School Cluster	Matched	Not Matched	Total
1			
Number	2,103	126	2,229
Percent*	9.15	7.42	
2			
Number	4,276	375	4,651
Percent	18.60	22.07	
3			
Number	6,228	475	6,703
Percent	27.09	27.96	
4			
Number	7,948	503	8,451
Percent	34.57	29.61	
5			
Number	1,812	187	1,999
Percent	7.88	11.01	
6			
Number	624	33	657
Percent	2.71	1.94	
Total			
Number	22,991	1,699	24,690
Percent	93.12	6.88	100

Note. Frequency missing = 124

*Percent is percentage of column except in the Total row, which shows percentage of row.

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Finally, Table C5 provides data to compare the two groups on measures of academic achievement. Specifically, mean LSAT, mean UGPA, and mean first-year grade averages in law school are shown, as are differences in *d* units. These data show that the means for the group for whom bar data have been matched slightly exceed the group for whom no data have been found on each of the three variables, but none of the differences was close to an effect size that approached practical significance.

TABLE C5

Mean LSAT, UGPA, and standardized first-year law school grades (ZFYA) earned by matched and not-matched study participants

Status	LSAT	UGPA	ZFYA
Matched			
Number	22,996	22,918	22,385
Mean	36.80	3.23	0.09
Standard Deviation	5.49	0.41	0.93
Not Matched			
Number	1,697	1,687	1,660
Mean	36.40	3.23	-0.16
Standard Deviation	6.03	0.43	0.98
Mean difference*	-0.072	0.000	-0.266

*The mean difference is in *d* units (Cohen, 1988); (not-matched mean minus matched mean) divided by total group standard deviation. A minimum *d* value of 2 is required to be considered a practically significant effect.

Note. FYAs are standardized within school to mean = 0, *SD* = 1.

The comparative analyses between the study participants for whom bar examination data were matched and those not matched produced no practically significant differences. The available data suggested that findings from analyses of data for participants for whom bar data were available can be generalized beyond the available sample to all study participants. Earlier analyses, found in Linda F. Wightman, *Legal Education and the Close of the Twentieth Century: Descriptions and Analyses of Students, Financing, and Professional Expectations and Attitudes* (LSAC Research Report, 1995), page 18, note 11, demonstrated that the study participants were an unbiased representation of the fall 1991 entering law school class.

An alternative to grouping jurisdictions into ten regions was to group them into four regional groups: New England/Northeast, South, West, and Great Lakes/Midwest. Table D1 shows the distribution of members of different ethnic groups by regional groups,[1] of which the ten regions designated Far West, Great Lakes, Midsouth, Midwest, Mountain West, Northeast, New England, Northwest, South Central, and Southeast, are subsets. Regional groups provide a broad geographical breakdown of distributions of bar examinees by ethnic group.

TABLE D1

Number and percentage of study participants by ethnic group and regional group in which they took their first bar examination

Region	Ethnic Group								
Frequency / Column Percent	American Indian	Asian American	Black	Mexican American	Puerto Rican	Hispanic	White	Other	Total
NewEngland/Northeast									
Number	17	282	359	17	72	125	5,220	97	6,189
Percent*	15.89	29.34	26.24	4.27	56.25	24.04	27.07	30.41	26.81
South									
Number	32	161	619	158	25	228	6,185	56	7,464
Percent	29.91	16.75	45.25	39.70	19.53	43.85	32.07	17.55	32.33
West									
Number	43	392	150	186	16	127	3,382	115	4,411
Percent	40.19	40.79	10.96	46.73	12.50	24.42	17.54	36.05	19.11
Great Lakes/Midwest									
Number	15	126	240	37	15	40	4,497	51	5,021
Percent	14.02	13.11	17.54	9.30	11.72	7.69	23.32	15.99	21.75
Total									
Number	107	961	1,368	398	128	520	19,284	319	23,085
Percent	0.46	4.16	5.93	1.72	0.55	2.25	83.53	1.38	100.00

Note. Frequency missing = 17
*Percent shows row percentage.

These data show that the largest percentages of all the students in this study took a first bar examination in the regional group named South and the smallest percentages in the group named West. White examinees tended to be the most evenly distributed across the four regional groups, but even among them, nearly twice the proportion tested in the South as in the West (32.1 percent compared with 17.5 percent). In contrast, 40.2 percent of American Indians, 40.8 percent of Asian Americans, and 46.7 percent of Mexican Americans took their first examination in the West. These findings are consistent with the observed concentration of these groups in the state of California as shown in Table 2.[2] Less than 22 percent of study participants took their

1. Regional groups used in this study match those used by LSAC in its Regional Statistical Reports. Specifically, the definitions of the regional groups are:
New England and Northeast
Midsouth, Southeast, and South Central (South)
Northwest, Far West, and Mountain West (West)
Great Lakes and Midwest

2. *See* Table 2, *supra* p. 17.

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first examination in the Great Lakes/Midwest regional group, but among those who did, nearly 90 percent were white. That ethnic distribution is strikingly different from the West, where only 76.7 percent of these first-time examinees were white. The largest percentages of black and Hispanic participants (45.3 and 43.9, respectively) took their first bar examinations in the South.

Although regional groups collapse the U.S. into broad areas that are easy to study and that show distinct distributional characteristics, they cover such a large area that they can mask some important aspects of the distribution of bar applicants of color. For example, while only 11 percent of black participants in this study took a first exam in the West, 115 of those 150 examinees (77 percent) took the examination in a single state in that regional group. Likewise, 317 of the 359 black participants who took a first bar in states that make-up the New England/Northeast regional group (i.e., 88 percent of them) took the exam in the three states that make-up the Northeast region.

The *regional group* designated 'South' listed the largest proportion of black examinees, but the individual *region* with the largest proportion of black examinees was the Northeast. This is because black examinees were fairly evenly distributed among the three regions that make-up the South regional group. Such an even distribution was not found among the New England/Northeast regions.

This appendix provides examples of how to use and interpret the parameter values estimated for each predictor variable in the logistic regression model. Table E1 presents some illustrations of the effect of changing values on each of the variables in the model in order to illustrate the interpretation of the results from this analysis.

TABLE E1

Illustration of using the parameter estimates from a logistic regression model to calculate the change in log odds and probability of passing the bar, for different values of LGPA, LSAT score, and law school cluster

Variable	Parameter Value	Example 1	Example 2	Example 3	Example 4	Example 5	Example 6
Intercept	0.3208	1	1	1	1	1	1
LSAT Score	0.0788	30	38	38	30	25	25
LS Grades*	1.5831	0	1	1	0	-0.5	-0.5
Cluster 1	-0.2242	0	0	0	0	0	0
Cluster 2	-0.4148	0	0	0	0	0	0
Cluster 4	-0.0493	0	0	0	0	0	0
Cluster 5	-0.4493	0	0	0	0	0	0
Cluster 6	-0.8128	0	0	1	1	0	1
	Log Odds "pass" =	2.68	4.90	4.09	1.87	1.50	0.69
	Probability =	0.94	0.99	0.98	0.87	0.82	0.67
	Odds of passing =	14.66	134.1	59.5	6.5	4.5	2.0

*Adjusted standardized cumulative law school grades.

Substituting selected values for LGPA, LSAT score, and cluster into the model and multiplying each by the parameter estimates reported in Table 15[1] (and repeated in Table E1) results in the log odds of the bar examination outcome being "pass." The adjusted LGPA is on a standardized scale ranging from approximately -3.5 to +3.5, while LSAT scores are on the 10 to 48 LSAT score scale. An examinee with an LSAT score of 30 and an adjusted LGPA at the mean (i.e., 0), who attended a cluster 3 school would have a log odds of passing the bar examination of 0.0788 * 30 + 1.5831 * 0 + 0.3208 = 2.6848. Notice that when all clusters listed in the table are coded 0, attendance at cluster 3 is indicated. This is because cluster 3 is the reference cluster. The log odds can be converted to an odds ratio by raising *e* to the power of the log odds. That is, $e^{2.6848} = 14.66$. "Odds" is the ratio of the probability of the event occurring to the probability of the event not occurring. For an examinee with an LGPA at the mean, and an LSAT score of 30, who attended a cluster 3 school, the odds of the outcome being pass rather than fail are 14.7 to 1. Dividing the odds by one

1. *Supra* page 42.

plus the odds will convert "odds" to a probability.[2] For the example under consideration, the probability of a pass is .94. The second example shows the impact on the odds of a pass as well as the probability of a pass if the LGPA were increased by 1 and the LSAT score by 8. Note that an LGPA increase of 1 is approximately equal to an increase in one standard deviation over the examinee in the first example because we are working with the rough equivalent of standardized scores. Similarly, an LSAT score increase of 8 represents approximately one standard deviation on the LSAT score scale distribution for test takers. The odds of pass rather than fail on the bar exam increases from 14 to 1 to 134 to 1 and the probability of a pass increases from .94 to .99. The only difference between example 2 and example 3 is that the cluster changes from cluster 3 to cluster 6. As a consequence of this change, the odds of a pass decrease from 134 to 1 to 59.5 to 1 even though the LGPA and the LSAT score are high and remain unchanged. These odds are only .44 as large as the odds of passing for a comparable student from a cluster 3 school (see odds ratio for cluster 6, Table 15). Even with a decrease in odds of this magnitude, when the LGPA and LSAT score are this high the probability of passing decreases only slightly from .99 to .98. Example 4 shows the impact of a change from cluster 3 to cluster 6 for the LGPA and LSAT score at the values shown in example 1. Again, the odds decrease by .44 and the probability of passing decreases. In this example, the decrement in probability is from .94 to .87. Examples 5 and 6 illustrate the impact of a change from a cluster 3 to a cluster 6 school for a lower achieving hypothetical person who has an LSAT score of 25 and a LGPA that is a half standard deviation below the mean. The odds of a pass for that person are considerably lower than for the higher achieving persons when all are from cluster 3 schools (examples 1 and 2). When the cluster changes from 3 to 6 for a person with the values shown in examples 5 and 6, the odds of passing decrease to 2 to 1 and the probability of passing decreases from .82 to .67.

2. Algebraic manipulation to obtain the log odds, odds, and probability equivalents are as follows:
Odds = P/1 - P, where P is the probability of passing and 1 - P is the probability of not passing.
In logistic regression, the dependent variable is the logistic transformation of the odds such that log (odds) = logit (P) = *ln* (P/1 - P), where *ln* is the natural logarithm.
In the case of the simple logistic regression equation with X as the independent variable, logit (P) = $a + bX$.
Odds of this expression can be obtained by taking the antilog, such that $P/1 - P = e^{a + bX}$.
Performing some algebra on the odds expression yields $P = 1/(1 + e^{-(a + bX)})$.

TABLE 1 Percentages of first-time takers and first time passers among the fall 1991 entering class study sample by jurisdiction compared with the percentages of all first-time takers and first-time passers who sat for the bar in each jurisdiction in July 1994 13

TABLE 2 Number and percentage of study participants by ethnic group and jurisdiction in which they took their first bar examination (presented in descending order of black examinees) 17

TABLE 3 Number and percentage of study participants by ethnic group and geographic region in which they took their first bar examination 19

TABLE 4 Number and percentage of study participants by region and pass or fail outcome of their first-time bar examination 21

TABLE 5 Number and percentage of female and male study participants who passed their first bar examination, by ethnic group 26

TABLE 6 Number and percentage of study participants by ethnic group and first-time bar examination outcome 27

TABLE 7 Number and percentage of study participants who passed the bar on the first attempt, by ethnic group and law school cluster 28

TABLE 8 Number and percentage of applicants with LSAT scores at or above, and below the grand mean of the fall 1991 entering class who passed and failed their first bar examination, separately by ethnic group 30

TABLE 9 Number and percentage of study participants by number of attempts and eventual bar examination outcome 31

TABLE 10 Number and percentage of study participants by ethnic group and eventual bar examination outcome 32

TABLE 11 Number and percentage of study participants who eventually passed the bar examination, by ethnic group and law school cluster 33

TABLE 12 Number and percentage of study participants by LSAT score group, ethnic group, and eventual bar examination outcome 34

TABLE 13 Correlation of selected factors with bar examination pass/fail outcome 37

TABLE 14 Chi-square improvement resulting from adding selected continuous variables to a bar examination outcome model in which LGPA and LSAT were already entered 40

TABLE 15 Selected summary statistics from a logistic regression model of bar examination outcome on LGPA, LSAT score, and law school cluster 42

TABLE 16 Mean and standard deviation of LSAT, UGPA, and Standardized LGPA (adjusted and not adjusted) by ethnic group 50

TABLE 17 Mean differences on LSAT score and adjusted LGPA between white study participants and study participants from selected other ethnic groups 51

TABLE 18 Proportion (and number) of white study participants passing their first bar examination at selected LGPAs, by law school cluster 53

TABLE 19 Number and percentage of study participants who did not pass the bar examination on the first attempt by number of attempts, ethnic group, and eventual bar examination outcome 56

TABLE 20 Number and percentage of study participants by ethnic group, bar examination outcome, and age group 57

TABLE 21 Number and percentage of study participants by ethnic group, bar examination outcome, and SES 58

TABLE 22 Number and percentage of study participants for whom a language other than English was spoken in the home when they were growing up, by bar examination outcome and ethnic group 59

TABLE 23 Number and percentage of study participants who held a full time job(s) for two or more years before starting law school, by bar examination outcome and ethnic group 60

TABLE 24 Number and percentage of study participants who had one or more years of employment in selected law-related fields before starting law school, by bar examination outcome and ethnic group 61

TABLE 25 Number and percentage of study participants, by bar examination outcome, ethnic group, and marital status 63

TABLE 26 Number and percentage of study participants who attended selected pre-enrollment academic preparation programs, by bar examination outcome and ethnic group 64

TABLE 27 Number and percentage of study participants who worked for pay during the academic year when they were undergraduates, by bar examination outcome and ethnic group 67

TABLE 28 Number and percentage of study participants who anticipated working for pay during their first year of law school, by bar examination outcome and ethnic group 67

TABLE 29 Number and percentage of study participants who anticipated working for pay during their first year of law school, by bar examination outcome, ethnic group, and expected number of work hours 68

TABLE 30 Number and percentage of study participants who had primary responsibility for themselves and others during law school, by bar examination outcome and ethnic group 69

TABLE 31 Number and percentage of study participants' expected class rank at the time they started law school, by bar examination outcome and ethnic group 70

TABLE 32 Number and percentage of study participants by ethnic group, bar examination outcome, and preference expressed for first work setting at the time they started law school 72

TABLE C1 Graduation status of study participants 89

TABLE C2 Number and percentage of matched and not-matched study participants by ethnic group 90

TABLE C3 Number and percentage of study participants by sex and matched/not-matched status 91

TABLE C4 Number and percentage of study participants by law school cluster and matched/not-matched status 91

TABLE C5 Mean LSAT, UGPA, and standardized first-year law school grades (ZFYA) earned by matched and not-matched study participants 92

TABLE D1 Number and percentage of study participants by ethnic group and regional group in which they took their first bar examination 93

TABLE E1 Illustration of using the parameter estimates from a logistic regression model to calculate the change in log odds and probability of passing the bar, for different values of LGPA, LSAT score, and law school cluster 95

FIGURE 1 Distribution of black and white first-ime bar examination takers across 22 jurisdictions that test the largest number of black applicants (in black applicant number order). 15

FIGURE 2 Adjusted LGPA means for examinees passing and failing their first bar exam, by jurisdiction 22

FIGURE 3 LSAT means for examinees passing and failing their first bar exam, by jurisdiction. 23

FIGURE 4 MBE scaled-score means for examinees passing and failing their first bar exam, by jurisdiction 25

FIGURE 5 Proportion of examinees passing their first bar exam by law school cluster for selected ethnic groups 29

FIGURE 6 Proportion of examinees passing their first bar exam matched on adjusted LGPA, separately by law school cluster. 44

FIGURE 7a Proportion of examinees passing their first bar exam, matched on adjusted LGPA, separately for cluster 3 and cluster 5 schools. 45

FIGURE 7b Proportion of examinees passing their first bar exam, matched on adjusted LGPA, separately for cluster 3 and cluster 6 schools. 45

FIGURE 8a Proportion of examinees passing their first bar exam, matched on LSAT score, separately for cluster 3 and cluster 5 schools 46

FIGURE 8b Proportion of examinees passing their first bar exam, matched on LSAT score, separately for cluster 3 and cluster 6 schools 47

FIGURE 9 Proportion of white examinees passing their first bar exam among cluster 3 and cluster 5 law school graduates, matched on adjusted LGPA 54

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